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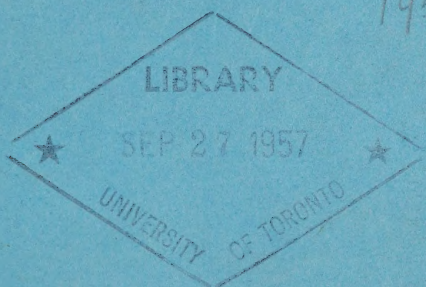


PROVINCE OF ONTARIO

Annual

# Report

OF THE MINISTER OF AGRICULTURE



FOR THE YEAR ENDING MARCH 31, 1957







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REPORT OF THE  
MINISTER OF AGRICULTURE





Ontario Department of Agriculture

**REPORT**  
OF THE  
**MINISTER OF AGRICULTURE**  
PROVINCE OF ONTARIO

FOR THE YEAR ENDING MARCH 31st, 1957



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DEPARTMENT OF AGRICULTURE  
PROVINCE OF ONTARIO

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TO THE HONOURABLE L. O. BREITHAUP, LL.D.,  
*Lieutenant-Governor of Ontario.*

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture for the year ending March 31, 1957.

I have the honour to be, sir,

Your obedient servant,

W. A. GOODFELLOW,  
*Minister of Agriculture.*

Toronto, March 31, 1957.





COLLEGES and  
EXPERIMENTAL STATIONS  
of the ONTARIO  
DEPARTMENT OF AGRICULTURE

- *Educational*
- *Research*
- *Demonstration*





## *Ontario Agricultural College\**

It is gratifying to report the progress that has been made to meet the more critical needs for building facilities. The Soils Building, the Physical Education Building, and the Service Building to house College machinery are in the process of construction. Tenders for the Biology Buildings are to be called in the near future, and the basic architectural plans for the Chemistry-Bacteriology Building have been approved. As reported a year ago, residence facilities for students still remain inadequate.

A Live Stock Insect Research Laboratory is being constructed by Science Service, Canada Department of Agriculture, on the O.A.C. campus.

The establishment of Advisory Committees for the Ontario Agricultural College, the Ontario Veterinary College, and Macdonald Institute, with an Advisory Board representing all three Colleges, has proved to be an effective organization for the development of policy.

### COURSES AND ATTENDANCE

In the Degree Course, additional subjects were offered by the Departments of Agricultural Economics and Agricultural Engineering. The Department of Botany offered a wider selection of studies to allow for greater specialization, especially in post-graduate work. The Department of Horticulture made some changes, chiefly in presentation and outline, in both Degree and Associate Diploma Courses. Several new courses were given by various departments to the students of the Graduate School and of the various Short Courses. A new statistical laboratory was set up by the Department of Physics for both teaching and research; it will also be available to those who do not have adequate computing facilities in their own departments.

In the undergraduate courses in Agriculture, 585 students were enrolled; in the Associate Diploma Course there were 166, in the course leading to the degree of Bachelor of Science in Agriculture there were 419, and in addition there were five special students. Students proceeding to the degree of Master of Science in Agriculture in the Graduate School numbered 49. The total attendance for the year at Macdonald Institute was 189; of these, 37 students were registered in the one-year Diploma Course and 152 were enrolled in the course leading to the degree of Bachelor of Household Science. Short Courses dealing with a great variety of subjects and varying in length from a few days to three months were held at different periods throughout the year. The attendance in Special and Short Courses was 1,464; the grand total attendance in all courses was 2,292.

### ACADEMIC FUNCTIONS

#### Baccalaureate Service

On Sunday, March 25, 1956, the annual Baccalaureate Service for the graduating classes of the Ontario Agricultural College, the Ontario Veterinary

\* For further information on the work carried out at the College consult the published annual reports of the Ontario Agricultural College.

College, and Macdonald Institute was held in War Memorial Hall. The baccalaureate address was delivered by the Reverend R. S. K. Seeley, D.D., LL.D., D.C.L., Provost and Vice Chancellor, Trinity College, Toronto.

#### **Graduation for Associate and Diploma Courses**

For the first time in the history of the College the graduation exercises for the O.A.C. and Macdonald Institute Associate and Diploma Courses were held jointly in War Memorial Hall on Wednesday, May 16, 1956. The students were addressed by Miss Helen Abell, B.H.Sc., M.S., Ph.D., Rural Sociologist, Division of Economics, Canada Department of Agriculture. Diplomas were presented to 70 members of the O.A.C. two-year Associate Diploma Course, and to 32 students of the Macdonald Institute one-year Diploma Course.

#### **Convocation for Degree Students in Agriculture and Household Science**

The degree of Bachelor of Science in Agriculture was conferred on 77 students, and the degree of Bachelor of Household Science on 32 students at the annual convocation exercises held on May 18, 1956, in War Memorial Hall. The degrees were conferred by Dr. Samuel Beatty, M.A., Ph.D., LL.D., F.R.S.C., Chancellor of the University of Toronto; the convocation address was delivered by Sir Douglas Copeland, K.B.E., C.M.G., Australian High Commissioner to Canada.

#### **NEW SCHOLARSHIPS, PRIZES, AND AWARDS**

A few only of the numerous scholarships, prizes, and awards presented to the College during the year can be mentioned here. The Government of Canada has offered a grant of \$1,500.00 for research in a cytotoxic study of the daisy fleabane. The Distillation Products Industries, Rochester, New York, has granted \$1,500.00 to assist in research work with vitamin E. A trust fund of \$3,000.00 has been established by the International Nickel Company of Canada for the advancement of educational progress at the College. The Toronto Anglers' and Hunters' Association has established a \$1,500.00 fellowship in the School of Graduate Studies, Department of Soils. The American Potash Institute Incorporated has offered a grant of \$1,000.00 for the purchase of necessary equipment in the Department of Botany.

The College wishes to acknowledge also the generosity of a number of public spirited donors who have established the O.A.C. Diploma Loan Fund. This Fund is to be used to assist young men who are planning to farm to secure the training provided in the Associate Diploma Course.

#### **EVENTS OF THE COLLEGE YEAR**

##### **Farm and Home Week**

During the annual Farm and Home Week from June 12 to June 15, 1956, more than 12,000 farmers and other interested persons visited the campus.

##### **Distinguished Visitors**

Distinguished visitors to the College during the year included: Mr. G. H. Amos, Agricultural Food Adviser, Office of the United Kingdom High Commissioner;

Professor Hendrie, Principal, West of Scotland Agricultural College; Professor Watson, Principal, East of Scotland Agricultural College; Alexander Paton, Technical Development Officer, Department of Agriculture, Scotland; Dr. Samuel Beatty, Chancellor of the University of Toronto; Sir Douglas Copeland, Australian High Commissioner to Canada; C. D. Hutchings, Director of Extension for Jamaica; Mr. Morhab, Deputy Minister of Agriculture for Central India; Mr. H. Reitberg and Dr. P. Doornbos, Principals of Agricultural Colleges in Holland; Dr. M. Rommell of Germany; Professor A. Brion and Professor R. Viullanue of the National School of Agriculture, Paris, France; Professor D. I. Hunt of the West of Scotland Agricultural College; Dr. Dion, Dean of Agriculture, Macdonald College, Quebec; Mr. Brian Llewyn of the Fison Corporation, Suffolk, England; Mr. G. K. Reakes-Williams of Tanganyika, Africa; Col. F. H. M. Potger, Senior Officer, Technical Training Scheme, Ceylon; Dr. J. K. Galbraith, Harvard University.

### Annual Alumni Reunion

More than 1,000 people, including graduates of the Ontario Agricultural College and Macdonald Institute and their families, attended the annual meeting and reunion of the O.A.C. Alumni Association on June 23, 1956.

### Groups and Conferences

The College was visited during the year by many groups of rural young people. More than 500 Junior Farmers attended the Junior Farmers' Conference in March 1956, and 1,200 were present at the annual field day in June. 4-H Week in July brought 850 farm young people to the College, and 700 attended the inter-county judging competitions in October. In May, 300 senior high school students attended the High School Open House, and 1,800 students of the Teachers' Colleges of the Province visited the College. Over 2,000 high school students were guests of the students at the annual College Royal in March. In July, 22 agricultural students from France were visitors.

Farm groups from 15 counties in Ontario, totalling almost 2,000, visited the College and toured the campus on tours arranged by the United Co-Operatives of Ontario. Over 600 live stock men, representing various breed associations, met at the College during Live Stock Week in June. Clergymen from all parts of the Province attended the seventh annual School for Rural Clergy in July.

Many other groups held meetings, short courses, conferences at the College during the year. These included: Entomological Society of Ontario; Ontario Research Foundation; Ontario Fur Breeders' Association; Ontario Dietetic Association; Ontario Poultry Conference; Canadian Plant Pathology Conference; Western Ontario Cheesemakers; Greenkeepers' School; International Congress of Entomology; Ontario Pest Control Operators; Guernsey Cattle Breeders' Association; Grand River Conservation Authority; Poultry Industry Committee; Ontario Dairy Goat Society; New York State 4-H Swine Clubs; Canadian Landrace Association; Ontario Dairy Herd Improvement Association; Ontario Fruit Branch Conference; Fieldmen's Conference (Ontario Federation of Agriculture); and Ontario Wholesale Farm Equipment Association.

### Death of the Registrar

On Sunday, July 8, 1956, the death occurred of A. M. Porter, who for 36 years was Registrar of the Ontario Agricultural College. Mr. Porter assumed the office



of Registrar upon his graduation in 1920. In his death, the College lost one of its most loyal and devoted servants. He knew more about the graduates of the College than any other living person, and followed their careers with deep interest. Thousands of graduates in every part of the world heard of his passing with deep regret. He was keenly interested in the College Athletic programme, and was honoured recently by the students for his valuable contributions in that field.

#### Death of Professor G. N. Ruhnke

Professor G. N. Ruhnke, for 34 years a member of the faculty of the Ontario Agricultural College, passed away suddenly in Ottawa on March 28, 1957, while attending a meeting of the sub-committee of the College Advisory Board. A graduate of the Ontario Agricultural College in 1923, he immediately joined the Department of Chemistry, and was appointed the first head of the newly formed Soils Department in 1945. In 1948, he was promoted to the position of Director of Research for the Ontario Department of Agriculture and Head of the O.A.C. School of Graduate Studies.

His field of interest was very wide. He was not only an authority on Agricultural Chemistry, but was an ardent conservationist, and constantly urged farmers to cherish their soil and use it wisely. He was a great scientist, a great friend, and above all, a great teacher. Thousands of graduates in every part of the world are grateful for his teaching. His death at 58 came far too soon, but he left a legacy of achievement and inspiration granted to few men.

His funeral was held from War Memorial Hall and was conducted by the College Chaplain, Rev. W. A. Young, assisted by his minister, Rev. D. G. Paton of Chalmers United Church, Guelph.

#### Changes in Senior Staff

On the superannuation of Professor R. C. Moffatt after many years of service, Dr. E. B. MacNaughton was promoted to be Head of the Department of Physics. On the resignation of Dr. J. S. Shoemaker, Dr. R. J. Hilton of the University of Alberta was appointed Head of the Department of Horticulture. Following the death of Mr. A. M. Porter, Mr. H. W. Pettipiere was made Registrar, and Mr. I. A. White was appointed to fill Mr. Pettipiere's former position as Dean of Men and Student Counsellor.

#### STUDENT ACTIVITIES

The Union Literary Society debaters lost to Osgoode Hall in the semi-final of the Inter-University Debating League series. For the first time since the J. Lockie Wilson Memorial Trophy was presented for Inter-Year Debating, it was won by an Associate Class — Year '57. In addition to its program in debating, the Literary Society carried out a public speaking contest and produced a three-act play in the fall term. The Union Philharmonic Society arranged the usual series of Sunday Nine O'Clocks and took part in the regular Inter-University Choral Festival which was held at the University of Western Ontario, the other visiting groups being choirs from Toronto and McMaster. The Philharmonic and Literary Societies co-operated in the production of a revue for the College Royal, and in order to do so, cancelled their usual second term dramatic and musical productions. The Student Christian Movement had an active year on the campus and, in addition, its members planned and conducted several off-campus religious services. In response



to unusually fine weather, the attendance at the College Royal was the best in several years and included a large number of high school students who came to the College for the day. The usual exhibits and programmes throughout the period of the Royal were of a very high quality; the chief innovation of the year was the presentation of a musical revue, Home Town Fair, following the prize-giving programme on the closing night. This was so successful that a repeat performance was given the following night.

## TRAINING FOR THE ARMED SERVICES

Officer Cadets were trained for the three armed services. The number of students who applied for this training was lower than previously, but the calibre remained high. Students participating in these schemes were given courses here on the campus during the academic year, and in training ships and establishments in Canada, the United States, Great Britain, and other NATO countries during their summer vacation period.

## RESEARCH AND DEVELOPMENTAL ACTIVITIES

The following report records major accomplishments in research and allied developmental activities during the 1956-57 fiscal year.<sup>1</sup>

### SOIL AND WATER

#### Soil Surveys

Detailed reconnaissance soil surveys were continued, with the co-operation of the Experimental Farms Service, Canada Department of Agriculture, in the Counties of Dufferin (150,000 acres) and Wentworth (150,000 acres). A soil map of Parry Sound District was completed.

A detailed soil and land use survey of Louth Township, Lincoln County, was completed (approximately 18,000 acres) and maps and a report were prepared.

Soil map and report No. 21 for the New Liskeard-Englehart area was published.

#### Soil Fertility

Lime treatment of surface soil at the Regional Research Station, Cayuga, increased the pH of the surface layer only. Lime was not leached into the subsoil during the four-year period.

The yield of alfalfa on acid soils in greenhouse trials was increased by addition of calcitic limestone.

In regional fertilizer trials, 20 pounds each of nitrogen, phosphorus (as  $P_2O_5$ ), and potassium (as  $K_2O$ ) per acre gave highest returns for oats following corn or other cereals. For oats following sod, 10 pounds N, 20 pounds  $P_2O_5$  and 20 pounds of  $K_2O$  gave highest returns. For corn, following corn or other cereals, 60 pounds N, 40 pounds of  $P_2O_5$  and 40 pounds of  $K_2O$  gave highest returns. With corn following sod, there was no response to nitrogen treatment. For potatoes, 50

<sup>1</sup> The Ontario Agricultural College wishes to acknowledge, with appreciation, the whole-hearted co-operation of other research groups, both federal and provincial.

pounds N, 100 pounds of  $P_2O_5$ , and 100 pounds of  $K_2O$  per acre gave the highest returns. Because of the more favourable moisture supply, the average return in 1956 was double that in 1955. Forty pounds of nitrogen per acre applied to wheat as spring top-dressing in April gave a return of \$10.00 per acre over the cost of the fertilizer. Top-dressing in May gave no increase in yield. Placement of 200-300 pounds of fertilizer in bands near corn, and broadcast application of the remainder gave six bushels of corn per acre more than the same amount of fertilizer broadcast on a sand, loam, and clay soil.

A field experiment showed that at least 35 per cent of the citrate soluble phosphorus in fertilizer should be water soluble in order to permit adequate uptake of phosphorus by corn.

Foliar fertilization of oats, corn, and wheat failed to increase grain yields. Foliar fertilization of potatoes on muck soil at the Muck Research Station gave small, uneconomic increases in yield.

Greenhouse studies showed that phosphorus and potassium fertilization of Burford loam increased the content of these elements in oats and the first cutting of hay. About 60 per cent of the applied phosphorus was fixed by the soil during the eight-month cropping period.

The four-year average return from 15 tons of manure per acre applied over the four-year period with continuous corn was \$4.65 per ton of manure added. For corn-oats-wheat-red clover rotation the return was \$1.95 per ton of manure, and on continuous sod the return was \$2.10 per ton of manure applied on Haldimand clay soil.

Soil test calibration studies showed that the  $PA_2$  test was the best method for phosphorus testing. Phosphorus fertilization requirement tables were set up for corn, oats, and potatoes.

A modified incubation test for soil nitrogen has been devised. The results correlated well with yield of potatoes in 1956. Time of sampling and the length of the air-dry storage period before incubation markedly alter the test values.

A greenhouse study with corn, using radio-active phosphorus, showed that a low soil temperature ( $13^{\circ}C.$ ) depressed growth of corn seedlings but phosphorus fertilizer increased the yield at low as well as high ( $20^{\circ}C.$ ) soil temperatures. Low soil temperature resulted in a lower percentage of phosphorus in the plants.

In tests at three locations in 1956, significant differences were obtained in the yield of corn because of methods of fertilizer placement. Application of fertilizer through the split-boot planter, both with and without broadcast distribution of part of the application, gave higher yields than other laterally and vertically varied placements.

A correlation was obtained between initial numbers of nitrifying bacteria and the lag in nitrification in acid forest soils. Perfusion tests showed that soils with low counts of nitrifying bacteria and no limestone added required up to 25 days before nitrification commenced, whereas only five to nine days were required by soils containing limestone and higher counts of nitrifying bacteria.

Studies on the activities and importance of thermophilic actinomycetes in compost and forest soils were continued. A new species, *S. thermoviolaceus*, was isolated and found to produce an antibiotic active against various microorganisms.

The amount of boron necessary for satisfactory nectar production in red clover is of the same order as the amount needed for good vegetative growth. In

areas where the boron supply is limiting to growth, a small increment of the element might be expected to improve both secretion per flower and the number of flowers.

A placement machine for radio-active fertilizer was developed for use in radio-active phosphate research.

### Soil Erosion

In 1956, about 18 tons of soil per acre were lost from the continuous corn plot on a seven per cent slope at the Hydrologic Station. Under corn in a corn-oats-hay-hay rotation, however, soil loss was only one-half ton per acre. No soil or water loss occurred on a continuous sod area.

Run-off measurements from small watersheds indicate that peak rates of flow are lower from snow melt and rain on snow than from rainfall alone. The highest peak flows have occurred during May when severe thunderstorms cause excess rainfall on bare soil just before or after spring seeding. Peak flows caused by excess rainfall have been much reduced on good sod cover.

### Irrigation and Hydraulics

During the period April 1 to December 31, 1956, precipitation was 29.10 inches at Guelph, and more than one-third of this (10.39 inches) percolated through the Guelph loam soil in lysimeters at Hydrologic Station. Only small amounts of calcium, magnesium, and potassium were contained in the drainage water.

Measured daily values for evapotranspiration at Guelph showed a highly significant correlation with potential values calculated by the Thornwaite or Penman methods.

An irrigation experiment on eight pasture mixtures was completed in 1956. In 1955, irrigation increased dry matter production by 4,502 pounds per acre. Plants in the irrigated section were more vigorous than those in the non-irrigated section in the fall of 1955 and the spring of 1956. This residual effect of irrigation, measured in 1956, resulted in an average of 1,003 pounds of dry matter per acre.

Observations made on a vinyl plastic irrigation pond liner indicate that there is considerable promise for this type of liner in preventing seepage losses, providing the cost can be reduced.

An applicator was developed to apply irrigation water precisely to small plots.

### Tillage Operations

No significant differences in seedbed preparation were found, in 1955 and 1956 trials, between disc harrows, spring tooth harrows, and rotary tillers. No significant differences were found between grain drill and harrows, grain drill and cultipacker, or cultipacker seeder methods of seeding.

In deep tillage studies on Haldimand clay, corn yields were better on plots on which the subsoiler and moldboard plow had been used than on plots where the deep tillage cultivator had been used. However, the differences were not significant, except at the high level of fertility.

### Drainage

A Rettger proportional weir was adapted for use in a tile drain effluent measuring device to facilitate processing tile drain flow data.



## CROPS

### General

A committee of Provincial and Federal Experimental Station personnel and the Ontario Research Foundation was established in 1956 to divide Ontario into crop regions, and to prepare a list of recommended varieties of field crops for each region. Recommendations for 1957 were prepared and published.

### Forage Crops

Information collected in the variety evaluation programme in forage crops resulted in the recommendation of five new varieties for Ontario. Du Puits alfalfa is recommended for short-term grass silage and pasture mixtures on good alfalfa soils in Southern Ontario. High yield, rapid recovery after cutting or grazing, early growth in the spring and growth late in the fall are its outstanding features. Smooth brome grass varieties, Lincoln, Achenbach, and Fischer, were placed on the recommended list for pasture and grass silage mixtures because of their improved general vigour compared with Canadian brome grass. From a three-year testing programme of rape varieties for supplemental pasture, Garton's Early Giant was selected for recommendation in Ontario. It out-yielded the standard variety, Dwarf Essex, by 22 per cent and is good in forage quality.

Reported inability of trefoil to be inoculated successfully unless double the amounts of inoculants are used was found to be incorrect. Tests showed that the recommended single amount was sufficient to nodulate successfully Empire and Viking varieties.

Vernal and Du Puits varieties of alfalfa were successfully inoculated with the R21 strain of *Rhizobium meliloti* used in O.A.C. legume inoculants.

Attempts to obtain root nodule bacteria which are resistant to the action of the common fungicides used in seed treatment resulted in the isolation of strains which are partially resistant to Leytosan, Arasan, and Thioneb, and completely resistant to Phygon.

In growth chambers, Leon red clover (single cut) plants, after a juvenile period of eight weeks, responded to a strong reproductive photoperiod (18 hours) without prior vernalization. Within the variety, the plants ranged from strongly winter annual to biennial types.

Corn was used to fill a special type cement-slab, plastic-lined silo. The silo proved satisfactory, and was practically water-tight, thus preventing loss of moisture and the subsequent infiltration of air into the ensiled material.

Metabisulphate, at eight pounds per ton, proved satisfactory, as determined by colour, aroma, and silage loss, as a preservative for silage made from a high moisture grass-legume mixture, in both tower and horizontal silos.

Analyses for crude protein were made on 127 samples of six varieties of timothy, and eight varieties of brome grass.

Total tocopherol contents have been determined for 91 samples of pure stands of common forage crops at various stages of growth.

### Other Field Crops

A large number of tetraploid barley strains was obtained by treating O.A.C. 21, Brant, and Montcalm with colchicine. Very large differences in fertility occurred



among the treated lines; those from O.A.C. 21 showing the most promise, while those from Montcalm had very low fertility.

The testing programme on a new variety of red winter wheat, named Kent, was completed. Foundation stock seed is being increased.

Tillering rate in barley was found to have a greater effect on barley yields than kernels per spike, or kernel weight. This was found to occur over a wide range of seeding rates and will be a useful guide in early generation selection.

### Tree and Small Fruits

In continuing the study of the factors influencing fruit set and yield of pears in the Collingwood area, it has been found that application of 3,780 pounds of 10-10-10 fertilizer plus 1,620 pounds of sulphate of potash per acre produced the highest yields of marketable fruit, the lowest number of culls, and the highest profit. Large applications of fertilizer have had only a slight effect on leaf analysis, but a large effect on yield of commercial fruit. Fruit set in 1956 was at the ideal level of 50 per cent of the blossoming spurs bearing fruit. The use of pollen inserts on two hives of bees per acre was largely responsible. It is believed that maximum yield and profit per acre for the experimental orchard has not yet been reached.

Tests of pollen distribution from inserts placed at the entrance of honeybee colonies were initiated in the Niagara area.

Boron deficiency was observed in fruit trees in some orchards in Kent, Middlesex, Oxford, and Norfolk Counties. Manganese and magnesium deficiency symptoms were found in fruit trees in an orchard near Cedar Springs. Severe rosetting of peach leaves, possibly as a result of zinc deficiency, was observed in an orchard near Port Dover.

### Vegetables

Data for four years indicate that maximum yield and dry matter of Katahdin potatoes are attained in 105 to 115 days. The tubers should be harvested and placed in storage at the end of this period as the reduction in dry matter content in the next seven to ten days is significant.

The testing programme on Potato Seedling 1711-9 was completed and the variety was licensed under the name Huron. This variety was produced by the Ontario Agricultural College in co-operation with the Canada Department of Agriculture. It is adapted to the late potato producing areas of Southern Ontario. The advantages of this variety are high yield, high dry matter, and resistance to scab. Foundation seed was distributed to 65 Certified Seed Growers in Ontario.

Results from three years' data indicate that soil and foliar applications of manganese sulphate do not benefit the growth of carrots, lettuce, celery, onions, and potatoes grown at the Muck Research Station. However, in certain areas of the Holland Marsh, severe manganese deficiency symptoms have been observed, particularly on onions and beets. This condition is readily corrected by two applications, at ten-day intervals, of five to ten pounds of manganese sulphate for onions, and two to four pounds for beets, in 100 gallons of water per acre.

Molybdenum deficiency symptoms were observed in cauliflower on several farms in Kent, Middlesex, Oxford, and Norfolk Counties, and boron deficiency was

observed in cauliflower and beets. Molybdenum deficiency symptoms were also observed in cauliflower near La Salle, Essex County, and in Guelph.

In tomato chromosomal mapping studies, monogenic mutants are being rapidly located. Ten mapped genes and one unmapped character are now being used in the plant breeding programme. Forty-eight  $F_1$  purple coloured crosses ranged in colour index values from 70 to 111, and the ascorbic acid content ranged from 41.3 to 11.7 milligrams per 100 grams.

The research with tomatoes, using radio-active material, has been extended to mutants.

Ninety-six vegetable varieties were rated in the field and also, where practical, in the processing laboratory. Of these 11 had outstanding value, including Extra Early sweet corn, Improved Tendergreen bush bean, H8 tomato, and German Wine rhubarb.

Hycrop Hybrid pickling cucumber, introduced as a cold resistant type in 1952, is being replaced under the same name with a new and similar type which is resistant to mosaic and spot-rot (scab or pox) and partially resistant to mildew.

Hybrid Long Green pickling cucumber has also been introduced. In contrast to Long Green, it has a tender skin with relatively few and smaller seeds. It has a better colour, much improved vigour, and disease resistance.

A green cotyledon lima bean selection—(((Henderson Bush) x Red Butterpea)  $F_4$  x White Butterpea  $F_5$  sd)—is early and possesses a degree of resistance to cold soils.

One-half of a crop of greenhouse tomatoes was grown under a controlled misting system. A number of blotchy ripened fruit were picked from the plants that received no misting, while no blotchy ripened fruit appeared on the plants grown under the mist. The fruit set and production were the same in both sections.

The intermittent mist propagation installation of two years ago was expanded, and one of its weak points was corrected by development of a new leaf or sensitizing element. The new control is at least as sensitive as other controls used and is of stronger construction.

## Flowers

Seventy-six new gladiolus seedlings from the Canadian Gladiolus Growers' Council were evaluated and rated. Three were rated as A, 3 as A—, 16 as B+, 37 as B, 11 as B—, 2 as C+, and 3 as C.

A new yellow upright flowering lily seedling, named Meadowlark, resulting from a series of crosses between selected seedlings of *Lilium tigrinum*, *L. umbellatum*, and *L. Willmottiae*, was introduced.

## Greenhouse Operation

A greenhouse was heated successfully with infra-red gas burners during the winter of 1956-57. A crop of chrysanthemums was grown during the period and no unusual growth patterns appeared. Soil temperatures under these burners were eight to ten degrees higher than those in a steam heated greenhouse. The radiant heat from the burners resulted in the use of more water during the early growth of the crop. Less drying of the soil occurred after the foliage covered the soil

area. The growth of the chrysanthemum stems was greater in diameter than that of similar varieties grown under steam heat, but the stems were solid. The higher soil temperatures caused vigorous root development soon after planting. A heavier fertilizer programme was necessary during the development of this crop, possibly because of the extra water required and the increased plant stem size.

### Storage Operation

The usefulness and efficiency of air-cooled storages were increased by the development of an automatic ventilating system which automatically makes full use of outside cold air for ventilating and cooling. Desirable storage temperatures are reached and maintained more rapidly and accurately than with manual control of ventilation. The equipment consists of one or more ventilating units (one per 15,000 cubic feet of storage) controlled by one electronic differential and one low limit thermostat. Each ventilating unit has a 2-speed axial flow fan, a powered damper, and an air-flow regulator. Depending upon the temperature requirement of the storage and the temperature of the outside air, the thermostats automatically switch the ventilating unit from cooling to air-circulation or vice-versa.

### LIVE STOCK

#### Breeding

During the year a swine herd average, based on 259 litters in which 2,530 pigs were born, was calculated. The more salient data were: pigs born per litter—9.8; average birth weight—3.0 pounds; weaning weight—33 pounds; per cent weaned 74.6; 154-day average weight—166 pounds; age at 200 pounds live weight—174 days.

Fifty-four beef bulls were tested, averaging a total gain of 469 pounds in the 196-day feeding period, or 2.4 pounds per day.

Eleven steers (Holstein) were fed for a 196-day period under A.R. rules for testing sires. The average total gain was 489 pounds and the average daily gain was 2.49 pounds. Nine carcasses graded commercial, two were B or blue grade.

Using D.H.I.A. (Ontario) records, reports on the average production of two-year-old daughters of 206 bulls were prepared. The average milk production of the progeny groups ranged from 5,105 to 10,706 pounds, the average for all two-year-olds being 7,804 pounds of milk. In pounds of fat the range of the group was from 162 to 390 pounds, with an average of 277 pounds for all two-year-olds.

Summaries on details of type characteristics of daughters of 998 Holstein bulls have been prepared. These studies show a wide difference between the type characteristics of daughters of different bulls.

A study of 17,818 classification reports on Holstein cows that had one or more R.O.P. records was made, by applying the paternal half-sib correlation method on an intra-herd basis, to determine heritability estimates on items listed under the "rump" and "feet and legs" section of the type reports. The heritability estimates for the various characteristics were: high pelvis .176, narrow rump .11, low thurls .14, high tail-head .10, low pins .10, coarse tail .12, sickled legs .15, close hocks .13, toes out in front .15, toes out in rear .13, straight legs .09, coarse legs .16, thick thighs .00, weak pasterns .23, shallow heel (front) .25, shallow heel (rear) .15, open-toed (front) .00, and open-toed (rear) .21. The variations in the magnitude of the heritability estimates indicate that breeding and selection could result in more rapid improvement of some characteristics than of others.



Using standardized production records, regression values of small magnitude were obtained for all type characteristics except "thick thighs" where it was found that the average production per cow increased 736 pounds with each unit of improvement in thigh scores.

A total of 3,270 Jersey cows with both an official R.O.P. record and a type classification on one kind of score card was studied. Heritability estimates, based on an intra-herd and sire regression of daughter on dam, for the different type components, were: head and neck .26, depth and width of chest .19, body capacity .28, back and loin .24, rump and tail setting .17, breed and dairy character .23, legs, pasterns and feet .30, fore udder .18, rear udder .07, teats .20, and final rating .24. Intra-herd and sire regressions indicate that type scores for "rear udder" and for "breed and dairy character" bear the closest relationship to production, whereas type scores for "back and loin" and "fore udder" bear the least relationship.

Using type records on 2,760 Guernsey cows reported to January 1, 1957, on breakdown score cards, a breed average for the various sections, based on "good plus" or better, was established. These were: general appearance 62 per cent, dairy character 81, body capacity 83, mammary system 49, head and neck 73, shoulders 62, front feet and legs 83, hind feet and legs 60, rump 60, fore udder 54, rear udder 53, teats and placement 49, and final rating 55 per cent. Sire summaries on the type characteristics of the daughters were prepared from these data.

To ascertain the lowering in yield of milk as the fat percentage increases, a study was made of R.O.P. records made by Ayrshire, Jersey, and Guernsey cows. A regression value, based on a variation of 0.1 per cent butterfat, was determined for each breed. The findings were:

<i>Breed</i>	<i>No. of Records</i>	<i>Regression in Pounds of Milk</i>	<i>Test Range</i>	
			<i>Low</i>	<i>High</i>
Ayrshire ----	3,408	67.9	2.8%	6.1%
Jersey -----	4,208	53.6	3.6%	7.6%
Guernsey ---	1,509	92.6	3.7%	6.9%

### Nutrition

Forty-eight pigs were individually fed in a 2 x 3 x 2 factorial experiment, using four replicates, to test rations containing varying amounts of corn, oats, and protein supplement. Significant differences in rate of growth owing to high protein levels were indicated, as well as lesser amounts of feed per 100 pounds of gain, and higher carcass scores. The ratio of corn to oats had no significant effect on feed efficiency. The level of corn in the balanced ration, from the start of the test to 125 pounds live weight, had no effect on final carcass score. However, the level of corn in the ration from 125 pounds to a market weight of 200 pounds had a marked effect on carcass score, lower levels of corn in the finisher ration giving leaner carcasses. The possibility of using high levels of corn in a well balanced ration, up to 125 pounds live weight, was clearly indicated.

Orchard and brome grass pastures were compared, using 18 steers in three replicates. The daily gain per steer on orchard grass was 1.3 pounds, and on brome grass 1.5 pounds.

Eighteen steers, averaging 820 pounds, were divided into six lots, three of which were fed the basal A.R. finishing ration, and three the same ration plus 10 milligrams of diethylstilbestrol for a period of 67 days. Mixed hay was fed



ad libitum, and the consumption averaged 15 pounds per head per day. The results were:

	<i>Control</i>	<i>DES</i>
Average daily gain .....	2.7 lb.	3.0 lb.
Grain per pound gain .....	5.2 lb.	4.6 lb.
Total cost of feed per pound gain .....	22.5¢	20.5¢
Dressing percentage .....	54%	54%
Carcass grade .....	7R, 1B, 1C	4R, 4B, 1C

A total of 32 male Holstein calves was used in a study of eight different methods of feeding veal calves. All calves were allowed three days of colostrum milk from their dams and were placed on test on the fourth day. All calves were marketed at approximately 200 pounds live weight. The average daily gains were: whole milk (pail fed) 2.02 pounds; whole milk (pail fed) plus calf starter, hay and grain 2.01; whole milk (pail fed) for three weeks, then skim-milk 1.54; whole milk (pail fed) for three weeks, then skim-milk plus calf starter, hay and grain 1.93; milk replacer 1.18; milk replacer plus calf starter, hay and grain 1.53; nurse cow (milk only) 2.59; and nurse cow (milk) plus calf starter, hay and grain 2.29 pounds.

The study of free choice feeding of a mineral supplement containing 1 gram of copper sulphate per ounce was continued with five herds of calves and five herds of dairy cows in Dundas County. The blood copper values of the cows were normal throughout the pasture season, but the blood copper values of the calves dropped below normal during July and August.

During the year, blood from 51 additional herds in Dundas and Carleton Counties were analyzed for serum copper. The values for the cattle in 27 herds were below normal, and a copperized mineral supplement was fed.

Two groups of two animals each have been fed relatively large amounts of copper (three and five grams of copper sulphate daily) for two years without evidencing any symptoms of copper toxicity or a significant deviation from normal in the copper content of their blood.

In the study of molybdenum toxicity in dairy cattle, one remaining Holstein has eaten seven grams of sodium molybdate daily for two years. The copper content of her blood has been normal during most of the period, rising above normal occasionally and then subsiding. The molybdenum content of the blood remains abnormally high. Extreme clinical symptoms of molybdenum toxicity, including change in hair colour, are exhibited for periods of two or three months and then disappear, while the diarrhoea only lasts for a few days.

Rabbits, fed sodium molybdate added to a commercial ration, showed depression of growth with 1,500 p.p.m. of molybdenum in the diet, and suffer from recurring dermatitis with 1,000 p.p.m. After two and three months the copper and molybdenum contents of the blood were above normal, while only the molybdenum content of the liver was higher than normal.

Results obtained from feeding calves artificial milk diets, with production of muscular dystrophy, and from herds in the field in which the disease has occurred, show that a high phosphorus intake does not protect against the disease.

### Housing and Management

Observations on experimental swine houses indicated that either plywood or tongue and groove was satisfactory for use in construction. Asbestos cement

board, aluminum, and galvanized iron were only satisfactory for roofing material. Hardboard was found to be unsuitable construction material for portable swine houses.

## POULTRY

### Breeding

A critical test with broiler chickens showed that the dominant white character had an inhibiting effect on rate of growth. This represents a very unusual case where a qualitative trait affects a quantitative trait.

An experiment involving 1,600 broiler chickens composed of Columbian Rocks, meat strain Barred Rocks, and the reciprocal crosses of these breeds showed a definite advantage in rate of growth for the crossbreds over the purebreds.

Certain broiler strains have been synthesized to conform to the ideal broiler. These strains have been developed to a point where they are ready for testing against the popular broiler strains.

### Nutrition

Prolonged autoclaving of a rapeseed oil meal, prepared in the laboratory by ether extraction, resulted in considerable destruction of lysine as measured by microbiological assay and by feeding experiments with chickens. Dry heating at 115-120° C. was relatively ineffective. The autoclaving affected tryptophane and tyrosine only slightly, and indirect evidence indicated that other essential amino acids were relatively stable to the heat treatments.

A dietary imbalance involving a lysine deficiency relative to other amino acids, rather than a low intake of lysine *per se*, produced achromatous feathers in chicks. Preparations from achromatous feathers were found to have a considerably lower tyrosinase activity than similar preparations from normal feathers. A folic acid deficient diet also produced achromatous feathers and a macrocytic anaemia similar to that produced by a lysine-deficient diet.

Molybdenum, as sodium molybdate, was fed to chicks at levels of 0, 50, 100, 200, and 500 p.p.m. added to a practical diet. At eight weeks of age only the chicks receiving the highest level of molybdenum showed a depression in growth. Percentage of bone ash and the copper content of the blood and liver were not affected but the molybdenum content was increased. The phosphatase activity of the intestinal mucosa was increased whereas those of the kidney and liver were unchanged. Eggs from pullets fed molybdenum contained the element, chiefly in the yolk, and in small amounts about proportional to the dietary content.

Colloidal phosphate, fed as the sole phosphorus supplement, to chicks to 12 weeks of age, gave poorer growth and lower bone ash than did bone meal. A mixture of colloidal phosphate and bone meal to provide equal amounts of phosphorus was about as effective as bone meal alone.

Meat meals and fish meals are not reliable sources of "fish factor" activity for chicks. Fish solubles appear to be a more reliable source of this factor, but the response obtained is of questionable economic importance with diets containing a source of "whey factor".

Broiler diets containing some wheat gave superior chick performance as compared with all-corn diets. The vitamin B<sub>12</sub> requirement of broilers, using diets

containing six per cent animal fat, is between six and twelve milligrams per ton of feed.

Gibberellic acid gave no response when included in a practical diet for chicks.

A stabilized rancid animal fat after a year in storage gave satisfactory results in a broiler diet. A commercial oleic acid preparation did not prove to be a satisfactory source of energy for use in broiler feed. Glycine added to broiler feeds at a level of 0.2 per cent produced a small but consistent increase in weight and feed efficiency. There was no interaction between glycine and methionine in broiler diets. A supplementary level of 0.5 pounds of methionine per ton of feed proved to be adequate in the presence of five per cent added animal fat.

The egg production of pullets reared on high-energy diets appears to be just as satisfactory as that of birds reared on conventional low-energy feeds. Based on performance in the laying pen, there would seem to be some advantage gained by allowing birds access to range during the growing period.

Supplementing practical chicken and turkey diets with zinc gave no consistent improvement in weight or feed efficiency.

Turkeys reared on deep litter were heavier and utilized feed more efficiently than similar birds reared on slatted floors.

Neither a high quality dehydrated orchard grass nor thioctic acid exhibited "grass juice factor" activity for turkey poults. Creatine did not improve the performance of poults fed practical diets. The free-choice feeding of a condensed whey product in conjunction with practical diets did not prove advantageous for turkeys. The use of high-energy diets for turkeys from hatching to marketing gave superior weight and feed efficiency as compared with the conventional mash and grain feeding methods.

## WILDLIFE AND RANCH FUR BEARERS

### Wetlands Evaluation

The wetlands in five townships in Wellington County were surveyed for wildlife usage. Four different techniques were evaluated.

### Parasitology

Thirty-one adult cuterebrid flies emerged from overwintering pupae. These belonged to two species, *Cuterebra angustifrons* and *C. grisea*. Attempts to mate *C. angustifrons* flies were unsuccessful.

Fourteen per cent of the northern white footed mice taken in live traps in the vicinity of Guelph and Brantford were infested with one or more cuterebrid larvae.

In life history studies on *C. angustifrons* it was found that female larvae are heavier than male; a 15 per cent weight loss occurs during the first six days after the formation of puparia; Warburg respirometer experiments indicate that, in this latitude, pupae enter an obligatory diapause when held at temperatures between 0 and 24° C.; the duration of the pupal period under outdoor conditions is  $315 \pm 15$  days; male flies generally emerge before the females.

### Nutrition

Mink rations containing a high proportion of fresh water fish were improved by the addition of fat.



## UTILIZATION OF PLANT AND ANIMAL PRODUCTS

## Dairy Products

In the manufacture of low-heat skim-milk powder, forewarming temperatures of 150-165°F., as commonly used, appear to be sufficient to reduce the total bacterial count from 1,000,000 per millilitre in the raw milk to less than 10,000 per gram in the milk powder.

The O.A.C. curd tension test for reconstituted milk gives practically the same results with respect to the determination of heat treatment of milk in processing as does the Rowland Kjeldahl method.

Consumer preference studies on ice milk of varying fat content and overrun have shown an increase in preference as the fat content increases. Variations in overrun did not show any significant effect on consumer preference until it exceeded 100 per cent, when a decrease in preference was indicated.

When corn syrup solids are used in combination with sucrose in soft ice cream, the dispensing temperature is reached more rapidly as compared with the use of sucrose alone as a sweetening agent.

The substitution of egg yolk solids for emulsifier in ice cream mix failed to produce any difference in the viscosity of the mix.

A study of different types of milk pipe-line installations in relation to quality of milk produced has revealed some defects in design from the standpoint of ease of cleaning and sanitizing. Recommendations made to manufacturers of this equipment have led to improvement in the design of releasers. In-place-cleaning of the type of weigh jar in common use has been found to be impossible.

The general use of low-heat skim-milk powder for cheese cultures has resulted in the problem of coagulation during the sterilization treatment in certain areas of the Province. Studies have shown that in the reconstitution of the powder the use of low calcium water (soft water) will prevent coagulation of the liquid culture. The addition of a small quantity of sodium citrate will likewise prevent this defect.

Exploratory work has shown a definite linear relationship between the hardness of reconstituting water and the heat stability of the resulting milk, the harder waters producing a milk of low heat stability.

The series of determination of freezing points and the composition of milk from six herds was completed.

## Meat and Poultry Products

To date, 131 carcasses have been cut to determine the percentage of weight in the various cuts. This year special emphasis was placed on carcasses from heifers. The summary of 20 heifer carcasses, 10 in B or blue grade and 10 in C or commercial is:

	<i>B grade</i>	<i>C grade</i>
Hip .....	25.7%	25.2%
Loin .....	18.2%	18.4%
Flank .....	4.6%	4.9%
Back Steak .....	.5%	.4%
Hind Quarter .....	49.0%	48.9%
Ribs (7 bone) .....	10.0%	18.4%



Sq. Chuck (4 rib) -----	26.1%	25.5%
Brisket -----	3.3%	3.5%
Plate -----	8.2%	8.6%
Shank -----	3.4%	3.4%
Front Quarter -----	51.0%	50.9%

The addition of aureomycin to feed and drinking water prior to slaughtering of fowl delayed off-odours and production of slime in poultry meat stored at 40°F. The degradation of protein, the increase in bacterial population, and the amount of fluorescence under ultra violet light correlated with the detection of spoilage by organoleptic examination.

Tests with frozen scrambled egg mixes resulted in the development of several which a taste panel found satisfactory after the mixes had been stored up to three months.

Unfavourable discoloration of poultry exposed for sale in frozen food counters was found to be correlated with slightly adverse flavour changes as compared with similar product held at a uniform 0°F. temperature. This is probably related to frequent defrosting of the product while exposed for sale in the frozen food counter.

### Vegetables and Frozen Foods

Twenty-two varieties or hybrids of sweet corn were canned and frozen (cut and cob) to determine their relative quality for processing purposes. Optimum maturity was recorded by the total soluble solids method using an Abbé refractometer. The cutting percentage was determined from 50 ears put through a FMC No. 2 Universal cutter. Organoleptic ratings were made following six months storage. Seven varieties rated either excellent or good for all methods of processing. In order of merit these were: Iochief Super (McKenzie), Golden Cross Bantam (Douglas), Golden Harvest (Harris), Extra Early (Douglas), Experimental Hybrid (Douglas), Gold Rush (Douglas), and Hybrid Spancross (Douglas).

A study was made of the ability of 24 types of cartons and 36 films to protect frozen foods from moisture loss when stored at 0°F. and 77 per cent relative humidity. The effect of different methods of wrapping and sealing was also assessed. Cartons that kept moisture loss at less than one per cent for one year included: glass sealers, tin cans, honey pails, polyethylene bags and cartons, heavily waxed cardboard tubs (Monocup), and cardboard cartons with polyethylene or paper bag liners (Redi-Freeze and Freez-R-Pack). Less satisfactory cartons included waxed cardboard of various shapes and sizes (Veribest and Sealright). Satisfactory films for wrapping included: aluminum foils (single or laminated), cellophane M.S. A.T., pliofilm, saran celluloplycast, cellothene, cheswrap, kraft papers coated with ½ or one mil polyethylene, polyethylene and glassine; less satisfactory was Freez-R-Wrap; and unsatisfactory films included butcher paper, sulphite paper, and several types of waxed kraft. Both the drugstore and the butcher methods of wrapping were satisfactory. Plastic tapes, elastic bands, and string were equally efficient for securing packages. A small break in the wrap markedly increased moisture loss.

### FUNDAMENTAL CHEMICAL STUDIES

#### Nutrition and Physiology of the Honeybee

A suitable technique has been developed for rearing honeybee larvae in the incubator. Several hundred adults have been reared. It has been possible to

produce queens by feeding the larvae on royal jelly that has been stored in a freezer, in a refrigerator, or lyophilized and stored in the dry state.

The main acid in royal jelly has been shown to be  $C_{10}H_{18}O_3$ . Chromatographic investigation has shown that there are at least two other acids present and progress is being made on their isolation and characterization.

### Rhizobium Metabolism

Nutritional studies on the slow growing root nodule bacteria have shown that while growth is greatly stimulated by the addition of certain peptides and amino acids, more newly discovered growth factors have little or no effect.

### Enzyme Properties

A study has been made of the relationship between substrate concentration and the optimum pH for the alkaline phosphatases of plasma, bone, kidney, liver, and intestinal mucosa of rats. The pH optima have been established for substrate concentrations large enough to maintain zero order rate of reaction for the phosphatases of plasma and various tissues of the rat. Magnesium activation and time course of reaction were also studied.

In preliminary studies on the effects of anti-lactic dehydrogenase on leukemia, techniques for measuring its activities have been devised and some serological and other characteristics of the enzyme have been determined.

### Insect Metabolism

In the work on grasshopper muscle metabolism, it has been found that the medium used for the preparation of homogenates must be selected individually for each enzyme system. Succinic and malic dehydrogenases have a greater activity in water homogenates, while keto-acid oxidases have a greater activity in isotonic saline. The conditions for optimal activity of succinic dehydrogenase in grasshopper thoracic and leg muscle tissue have been established. Species and sex differences were found for the enzyme systems which have been studied. Chromatographic methods indicate that the same free amino acids are to be found in muscle extracts and in blood serum. Spectrographic determination of metallic elements indicates considerable differences between leg and thoracic muscles. Zinc is present in high concentration.

Isolated insect tissues *in vitro* have been maintained in culture media for as long as three months. No actual growth occurred as indicated by mitotic figures or an increased number of cells.

### Furans

Work has been carried out on the synthesis of porphyrin-like substances wherein the furan nucleus is taking the place of one or more pyrrole nuclei in the large ring structure. Several new compounds of this type have been prepared and characterized.

Three new compounds, described as nitrated difurylalkanes, have been synthesized and their structure elucidated. They exhibit bactericidal properties.

### Diphenylcyanamide Derivatives

New derivatives of diphenylcyanamide have been synthesized wherein sulphur has been substituted for oxygen, thus yielding 2-thiopseudoureas rather than 2-pseudoureas.

Diphenylalkylthiopseudourea hydrohalides and dichlorodiphenylalkylthiopseudourea hydrohalides are formed when the corresponding thiourea is treated with an alkyl halide. The thiourea is prepared by the addition of hydrogen sulphide to the corresponding cyanamide compound. The hydrohalides are unstable in the presence of alkali. This type of compound has some promise as a fungicide.

### Analytical Procedures

The use of a condensed DC arc as a source for spectrographic analysis has been investigated and it has been found that it will give better reproducibility on the major elements — calcium, phosphorus, and magnesium — than any of the spectrographic methods previously used.

The A.O.A.C. method for boron using quinalizarin has been studied and two changes have been suggested which are presently being investigated with other laboratories.

### Microbiological Assays

Investigations in the microbiological method for pantothenic acid determination have resulted in improved extraction of the vitamin from low potency materials. Changes in the design of the assay gave a simplified and more precise procedure.

Improved assays for methionine, isoleucine, tryptophane, tyrosine, and glutamic acid were obtained by modification of the procedure.

Marked changes, occasionally observed in the response of an organism to an amino acid, appeared to result from the practice of frequently transferring the organism. Since frequent transfer is necessary to maintain a viable organism for assay purposes, the adverse effect of this practice was circumvented by replacing the organism from a stock of lyophilized cultures whenever abnormalities appeared in the response.

## DISEASE, INSECT, AND WEED CONTROL

### Diseases

When studied manometrically, sonic extracts of *S. scabiei* mycelium have been shown to carry out a number of the oxidations of the Krebs's cycle. However, certain key reactions (citrate formation and  $\alpha$ -ketoglutarate oxidation) have not been demonstrated.

Cytological observations indicating hyphal fusion in *S. scabiei* have been confirmed. Initial cells, which have been reported as playing a major role in the life cycle of the organism, have not been observed. Numerous nutritionally-deficient mutants have been isolated, five of which have remained relatively stable.

Certain changes in the preparation of the soil extract medium used to determine the possible correlation between the occurrence in soils of groups of bacteria and the



incidence of potato scab appeared to be responsible for significant fluctuations in both bacterial and actinomycete counts. Most noticeable was the effect of heat treatment, in preparing the soil extract, on certain groups of organisms, particularly those having simple and complex nutritional requirements.

Root and crown rot in red clover usually does not appear until the plants enter the reproductive phase of growth. Frequently the main root is completely destroyed before flowering is completed. The rot was more severe in fields low in potash, phosphate, or both.

Further studies have been made in seed treatment of a dwarf bunt of winter wheat. Recommendations have been made that growers of winter wheat treat their seed with one of the chlorobenzenes in order to prevent the introduction of dwarf bunt with the seed. Inoculation experiments in the field showed that late plantings increased the infection. For three dates of planting—September 6, 19, and October 3—the average incidence of dwarf bunt in inoculated plots was 14, 35, and 54 per cent, respectively.

Investigations with artificially and naturally infected poultts have shown that it is possible to diagnose pullorum disease in turkeys with a fair degree of accuracy by employing the tube agglutination method with a mixed standard and variant antigen.

### Insect and Pest Control

While the 1956 season was not favourable for the development of a very large housefly population, the application of residual sprays—organic phosphate compounds (ET 14, once in early June, and diazinon, once in early August)—to surfaces where flies usually rest, and the fogging every third day of the mushroom compost piles and adjacent areas with a pyrethrum-synergist mixture, reduced the fly population in the Applewood Acres (Dixie) housing and shopping centre development to a point of almost negligible importance.

A five-year study in an apple orchard in which insecticides, known to be destructive to beneficial predatory and parasitic fauna, were omitted from the spray program showed that plant-feeding mites never developed large populations but injuries by insects which attack the fruit directly (codling moth, bud moth, and apple maggot) were too numerous for satisfactory commercial production.

Malathion provided effective control of arborvitae leaf-miners on cedar hedges. No phytotoxicity was evident.

There are, at present, 260 townships under the Warble Fly Act, 15 more than in 1955. The number of viable grubs per animal in herds after treatment varied from 0.2 to 6.0, with an average of about two.

The powder post beetle, *Anobium punctatum*, is responsible for most of the insect damage to stables. A single, thorough application of five per cent pentachlorophenol in light oil proved effective control in stables where the manure was not allowed to accumulate and where ventilation was adequate. The lyctid, *Lyctus planicollis*, causes the most damage to hardwood flooring in homes.

Of 258 new organic compounds investigated for residual and direct spray effects on two species of aphids, three showed considerable promise. Ten compounds were highly phytotoxic. A new systemic insecticide seemed only moderately effective against aphids.



The results of a co-operative groundhog control experiment using gas cartridges indicated that in generalized farming areas their use could not be justified unless a community effort was made.

A compact and manoeuvrable power driven precision duster was developed for experimental plot work.

## Weeds

Applications of erbon, ranging from 20 to 160 pounds per acre, were made in June on a fallow soil classified as Burford loam. Soil samples, at depths of 0 to 2, 2 to 4, and 4 to 8 inches, were taken periodically throughout the summer. In soil this herbicide splits into dalapon (2, 2-dichloropropionic acid) and 2,4,5-trichlorophenoxy type moieties. The dalapon content of the the soil samples was determined by a chemical method. There was a continual drop in the dalapon content of the soil over the summer, being about 75 per cent disappearance in 10 weeks. Penetration of dalapon into the soil was relatively slow and seemed to be dependent upon rainfall.

Treatment of infestations of wild carrot with 2,4-D and 2,4,5-T, and a mixture of these two herbicides showed that 2,4-D alone is not as effective in control of this weed as 2,4,5-T or the mixture. It is now known that there are two strains of wild carrot, one of which is resistant to 2,4-D.

Studies of the effects of 2,4-D and 2,4,5-T on turnips showed that turnips are susceptible to concentrations as low as five p.p.m. of these herbicides and that 100 p.p.m. killed all turnip plants. Treatments of 10 p.p.m. or more produced distortion of the roots, giving them an hour-glass appearance. Root weight and diameter were reduced and splitting occurred. A yellow band of pigment, possibly  $\alpha$  and  $\beta$  carotene, developed in the cambium region. There was a marked drop in the reducing sugar content of the turnips during storage and a marked increase in both soluble and insoluble nitrogen.

A number of chemicals were tested as pre-emergent treatment on corn and soybeans. As a result Alanap 3 was recommended for soybeans and CMU for corn as weed control practices.

Grasses, including quack grass, around orchard standard and dwarf apple trees can be killed, with no regrowth, by spraying with the sodium salt of 2,2-dichloropropionic acid (Dowpon) at 25 pounds in 100 gallons of water, when the grass is about 10 inches high. The trees were not injured by the spray.

## ECONOMICS OF FARMING

### Farm Management

The farm management and accounting project included the summary and analysis of 215 farm records with 33 counties represented. Labour incomes in 1955 were down slightly from the previous year, the average of the group being \$289. less than in 1954. However, all types of farming were not adversely affected as dairy specialty and cash crop farms both showed gains over the 1954 figures, the labour income of the former being an increase of \$114. and of the latter \$689. over the 1954 average. Most severely affected were the beef-hog farms which showed a drop in labour income of \$1,357. to give the only negative labour income among the

types of farms analyzed. The average labour income for this group of 60 co-operators was minus \$798.

### Soil Conservation

An analysis of the first 30 records kept by farmers starting to operate on a soil conservation plan in 1955 was made. The main features of the analysis indicated that these farms average 188.5 total acres, 106.5 crop acres, 41.3 animal units, 426.7 man work units, 274.4 work units per man, and \$33,142. total capital. Total receipts averaged \$9,962., total expenses averaged \$8,680., and labour income averaged \$115. Generally speaking, the average of these farms was below the average of all farm account co-operators. Returns in future years should indicate any changes as the full effects of the soil conservation plans become apparent.

### Potato Fertilization

Production functions of three types have been computed for each of five experimental locations in 1954 and three locations in 1955. Positive responses to each of the three basic nutrients applied (N,  $P_2O_5$ ,  $K_2O$ ) have been observed within the ranges of application included in the experiment. There is virtually complete lack of interaction response among the three nutrients in potato production.

### Grain Marketing

A study of all country elevators of Essex, Kent, Lambton, Middlesex, and Elgin revealed that there were 105 such elevators. In the 12 months ending April 30, 1956, they handled 13.4 million bushels of corn, 5.2 million of soybeans, 3.7 million of wheat, and 0.9 million of white beans. There was a strong seasonal pattern of farmer marketings of wheat and soybeans. Seventy per cent of the year's shipments of wheat were received by country elevators in July and August; 77 per cent of the year's soybeans in September to December. Corn and white beans displayed a remarkably stable pattern of marketing.

Ownership of elevators is by no means concentrated. One organization owned eight elevators, another five, four owned three each, three owned four each, 10 owned two each, and the remaining 48 were independent. Total storage capacity in 1950 was 1.3 million bushels, in 1955 it was 2.7 million bushels with 207,000 under construction. By 1959 the total capacity is expected to be 3.5 million bushels.

A study of soybean prices in Ontario indicated a marked seasonal pattern during 1951 to 1955. The price in July was six per cent above the year average, and the price in October eight per cent below. Transit credits on soybeans moved by rail to Toronto and Hamilton from Southwestern Ontario have provided an important saving to the processing industry. There is considerable doubt as to the possibility of satisfactory hedging between the Ontario spot market and the Chicago futures market for soybeans.

### Creamery Operations

Thirteen Ontario creameries were studied. Trends in production show a shift from dairy butter to creamery butter manufacture. Commissioned truckers have more incentive to enlarge the butterfat pick-up, usually at lower cost to the

creamery. Patron delivery may result in higher grade cream but increased procurement costs. Quality is still a problem. The 1954 study indicated June butterfat receipts as 282.4 per cent of January receipts. Overlapping of cream routes is a dominant factor in inefficiency of procurement. Effective co-ordination of tasks, scale of equipment, and manager-employer relations are efficiency factors. The marketing trend is toward a centralized marketing agency with fewer and larger creamery members.

### Milk Marketing

Information on the impact of bulk conversion on the production and marketing of fluid milk was obtained from 175 Ontario farmers converting to bulk handling and 105 farmers not converting, although they had the opportunity to do so. After converting to bulk handling, farmers increased the number of milking cows in the herd by 24 per cent, on the average. This increase varied from 29 per cent for farmers converted more than a year to 16 per cent for those converted less than six months, and from six per cent for herds with more than 40 cows to 26 per cent for herds with less than 15 cows. Of the farmers who did not convert, 34 per cent obtained another outlet and 66 per cent withdrew from the fluid milk market. The cost and difficulties of financing bulk equipment were given as the major reasons for not converting. A comparison of farms that converted with those that did not, revealed considerable difference in herd size, farm size, labour use, milk production per cow, and age of farm operator.

A study of changes in the Toronto milk-shed, from 1950 to 1955, revealed that the number of shippers has decreased from 3,841 in 1950 to 3,207 in 1955, a decrease of 16.5 per cent. The largest decrease was in the area within 20 miles of Toronto where one-third of all 1950 shippers have withdrawn from the market. On the other hand, in the eastern area of the milk-shed, which comprises the counties of Hastings, Northumberland, and Peterborough, the number of shippers in 1955 was 12 per cent above that of 1950, and in the area comprising the counties of Brant, Lincoln, Middlesex, Oxford, and Elgin, the 1955 figure was 17 per cent above 1950. The average size of shipments has been steadily increasing through the dropping out of one- and two-can shippers and the entry of four- to six-can per day shippers into the market.

### Transportation

A statistical summary of agricultural rail traffic in Canada from 1946 to 1954 showed that approximately 23 per cent of Canadian freight tonnage is made up of agricultural products. Approximately one per cent consists of animals and their products. Wheat is the major component, being 52 per cent of the tonnage. The tonnage of animals and their products has declined steadily through the period. Cattle and calves are the major component of this tonnage, amounting to 36 per cent. There are significant downtrends in cattle and calves, sheep, dressed meats, eggs, butter, cheese, and wool.

Ontario is a net importer of agricultural products, especially wheat, oats, barley, rye, flaxseed, fresh fruit, and potatoes. There is a rising trend in the net imports by rail of animal products into Ontario, including cattle and calves, sheep, dressed meat, butter, wool, hides, and leather.

The Atlantic Provinces are normally net importers of agricultural products and animal products, and the Western Provinces are net exporters.



## EXTENSION AND SERVICES

Members of the College staff in all departments are called on throughout the year for advice and assistance, by thousands of individuals and many scores of organized groups. To answer all these requests adequately, whether by letter or by personal visit, takes more time than is generally realized. In addition to speaking at public and scientific meetings, taking part in radio and TV programmes, judging at numerous fairs and shows, and assisting in other activities of farm groups, members of the staff have also visited thousands of farms to deal with various individual problems. They have prepared bulletins and circulars and numerous articles for the farm press and other journals. In addition they have been responsible for a regular service of news releases and photographs which have been sent to the daily papers and other appropriate outlets.

Analysis has been carried out in the College laboratories of some 20,000 samples of soil, of over 2,000 samples of butter, of nearly 800 samples of well water, and of hundreds of other samples submitted by farmers in various parts of the Province. Foundation stock seed of 16 varieties of field crops has been distributed; legume inoculants, lactic cultures, and pullorum antigen have been produced and distributed on an extensive scale. Aid has been given in the spray service and the warble fly control programmes and help provided in weed control and in the problems occasioned by plant diseases and injurious insects.

Special mention should be made of the extensive work being done in Poultry Flock Approval, in Apiary Inspection and Disease Control, in the Farm Building Plan Service, and in Farm Management Associations:

1. The Poultry and Turkey Approval Policies are administered by the Department of Poultry Husbandry; the Department of Bacteriology supervises the pullorum testing. The total number of chickens tested was 1,411,720 compared with 1,119,157 the previous year. The reaction on first test was 0.07% compared with 0.10% in 1955-56. The majority were tested by the rapid whole blood method. The total number of turkeys tested was 57,821 compared with 51,133 the previous year. The reaction in the first test was 0.01% as compared with 0.31% in 1955-56. All turkey blood samples are tested by the tube method.
2. Apiary registration in Ontario in 1956 totalled 141,587 colonies operated by 3,298 bee-keepers. Apiary inspection was carried out in 3,614 apiaries, totalling 56,833 colonies. American Foulbrood was found and destroyed in 1.7% of these colonies. Approximately 80 disease samples were diagnosed in the laboratory.
3. The Farm Building Plan Service staff produced a new design for milk house construction of which some 2,000 sets of plans were distributed. Approximately 300 sets of working drawings of a new type of poultry house have been distributed. Designs for 12 new farm structures, a series of six designs for rural school improvement, and many plans for construction of a custom nature have been completed.
4. The Department of Agricultural Economics has continued its assistance to Farm Management Associations. There are now 30 of these associations, 14 of which sent in records for summary and analysis on an association basis. During the fall and winter, 25 farm management short courses with a total attendance of almost 900 were held throughout the Province. At these two or three-day schools, groups of interested farmers received instruction in farm accounting, in analysis of a farm business, in the preparation of budgets, and also discussed current farm problems.

The Department of Public Relations performed the function of an extension service unit and visual aid centre for the Ontario Department of Agriculture as



well as for the College. During the year it produced thousands of photographic prints and slides, hundreds of feet of 16 mm film and microfilm, and several motion pictures, some with sound. It also organized and conducted courses in photography and projectionist training, in the use of exhibits, and in layout and design for the Associate Diploma Course, the Short Courses, and the faculty of both the Ontario Agricultural College and the Ontario Veterinary College. It printed and distributed many thousand copies of numerous circulars and prepared extensive exhibits for a variety of fairs. It organized the annual Winter Short Course, attended by over 400 students, and arranged programmes and accommodation for the many groups visiting the College, in all some 40,000 people.

## *Macdonald Institute*

### Registration

Registration took place September 13th, 1956, with 39 students enrolled in the Diploma Course, and in the Degree Course 49 in first year, 41 in second year, 32 in third year, 32 in fourth year, making a total of 193 home economics students. In addition, two special students were enrolled: Miss Mary Shukri of Baghdad, Iraq, who came in January, 1956, continued until December with undergraduate courses in foods and nutrition, as a preparation for post graduate studies at Cornell University under the terms of her F.A.O. International Scholarship; Mrs. Faith Bauman, missionary from India, audited a variety of home economics courses considered helpful to her in her future work in Indian communities.

With somewhat increased enrolment (7 per cent increase over 1955) in Macdonald Institute, and residence accommodation taxed to the limit, third year students were prepared for the possibility of living out of residence. Adequate rooming houses were investigated by the Dean of Women; students volunteering to live out were referred to these accommodations.

### SCHOLARSHIPS, AWARDS AND BURSARIES

#### Degree Course

Atkinson Charitable Foundation Bursaries for entrance to the Degree Course were available for the third time in 1956, and were won by thirteen students. A report of these winners is included in the O.A.C. lists, as are the winners of the Dominion-Provincial Bursaries, of which eleven First Year students and eleven from other years were recipients.

A Wentworth County Scholarship, first awarded in 1955, the Christina Ann Smith Memorial Scholarship (\$150.00 per year for four years) replaces the earlier \$100.00 County Scholarship, and was won by E. Margaret C. Calder, R.R. #3, Glanford Station, Ontario.

In 1955, Wellington County offered a Scholarship of \$100.00, to be awarded annually to a young woman entering a course of one year or more at Macdonald Institute. The winner was Mary M. Townsend, R.R. #5, Belwood, Ont.

The Huron County Scholarship (\$100.00) was awarded jointly to Marilyn J. Cooper, Fordwich, Ontario, and Catherine E. Powell, R.R. #3, Clinton, Ontario.

Degree Course — Undergraduate Scholarships — The Ontario Women's Institute Scholarships of \$100.00 each were won by four students in the First Year of the Degree Course on the basis of their rural regional location and of their standing in high school courses. The four Ontario student winners were:

- Elizabeth A. Bradley, R.R. #3, Stittsville, Ontario;
- Helen M. Hamilton, Colgan, Ontario;
- E. Gail Lehrbass, R.R. #1, Alvinston, Ontario;
- M. Elizabeth Webster, Box 353, Beamsville, Ontario.

The Adelaide Hoodless Memorial Scholarship of \$140.00 was awarded for the third time to a Third Year student on the basis of general proficiency in both curricular and extracurricular work, with preference given to a student from a rural community. The winner was Eleanor M. Rose, R.R. #1, Ailsa Craig, Ontario.

The Borden Home Economics Scholarship of \$200.00 was awarded to the Fourth Year student standing highest in the work of the diet therapy course, Shirley P. Bullock, R.R. #2, Simcoe, Ontario.

The May B. Stewart Scholarship in Home Management, of \$100.00, awarded to the student who has shown outstanding ability and progress in all phases of Home Management in the second and third years of her course, was won by Eleanor M. Rose, R.R. #1, Ailsa Craig, Ontario.

The Walter M. Stewart Scholarship in Clothing and Textiles, of \$100.00, awarded to a student in the Clothing and Textile option who has shown outstanding ability and progress in course work throughout three years, was won jointly by Marcia J. Dick, 52 Tecumseth Street, Orillia, Ontario, and Eleanor M. Rose, R.R. #1, Ailsa Craig, Ontario.

The Students' Council Scholarship of \$30.00, awarded annually to the student obtaining highest standing in the Second Year of the Degree Course, was won by Margaret U. Fair, R.R. #5, Guelph, Ontario.

The Katherine T. Fuller Award of \$30.00 for a worthy student in Second or Third Year of the Degree Course was won by Mary E. Lanktree, Laurel, Ontario, (Third Year).

The Jean C. Bradley Memorial Award of \$65.00, awarded annually to a Fourth Year student considered most faithful in her work, thoughtful of others, and achieving worthy standing in Foods and Cookery throughout her course, was won by Barbara A. Morwick, 34 Dundas Road, Guelph, Ontario.

The Danforth Foundation Summer Fellowship, giving one month of scientific observation and camp life, was awarded to a Third Year student, Florence G. B. Clarke, Box 12, Centralia, Ontario. The two weeks' Summer Fellowship for camp experience, offered to a First Year Degree student, was won by Marilyn E. Greer, North Gower, Ontario.

Guelph Branch, Macdonald Institute Alumnae Association Award of \$25.00 for a student standing highest in the First Year, was won by Joan E. Thomson, 169 William Street, Exeter, Ontario.

The Ethel M. Christie Award of \$30.00, for highest standing in English during the first three years, was won by Mrs. M. Elizabeth (Mallory) Whitley, R.R. #1, Bloomfield, Ontario.

Other important awards received by Degree students were:

Leonard Foundation Bursaries awarded to:

Florence G. B. Clarke, Box 12, Centralia, Ontario, and  
Marian E. Ackman, 256 Riddell Street, Woodstock, Ontario;

Bissell Bursary Fund of \$75.00 awarded to Florence G. B. Clarke, Box 12, Centralia, Ontario;

The London Home Economics Association Award (\$100.00), awarded to Carolyn M. Thirlwall, R.R. #1, Denfield, Ontario;

The Canadian National Exhibition 4-H Scholarship (\$750.00), awarded to Julia M. Lane, Barrie Island, Ontario;



The Canadian Legion of the British Empire Service League Scholarship (\$400.00), awarded to K. Marilyn Rutherford, R.R. #1, New Liskeard, Ontario;

The Northumberland and Durham Counties Scholarship (\$200.00), awarded to Margaret L. Mulhall, 272 College Street, Cobourg, Ontario.

Macdonald Institute Alumnae Bursary — Three students required a loan from the bursary during 1956.

Diploma Course — The Adelaide Hoodless Memorial Scholarship of \$140.00 was awarded to three students on the basis of general proficiency in both curricular and extracurricular work during the year. The awards of \$50.00 each were made to M. Jean Barnet, 244 Hill Street, Fergus, Ontario, Lois G. McCorquodale, R.R. #3, Lakeside, Ontario, and Oriole A. Vane, Stockton, Manitoba.

The Macdonald Institute Alumnae Association prize of \$25.00, awarded to the student with the highest academic standing, was won by Oriole A. Vane, Stockton, Manitoba.

The Macdonald Institute prizes of \$10.00 each, awarded to the best all-round student for outstanding progress in clothing construction and in food preparation, were won respectively by:

Lois G. McCorquodale, R.R. #3, Lakeside, Ontario;

M. Joyce Irwin, 135 Brentwood Road N., Toronto, Ontario;

Helen J. VanLoon, 17 Wellington Blvd., Guelph, Ontario.

It is anticipated that several new scholarships will be announced during the coming year, as plans are being worked out at present with interested organizations.

#### Advisory Committee of Macdonald Institute

Four times during the year the six members of the newly-appointed Advisory Committee met for two-day sessions, joining with the Advisory Board of the three colleges for a final session. Members of the Advisory Committee were: Mrs. Jean Whittemore, Toronto; Mrs. Jean Butterfield, Toronto; Miss Olive Brownlee (now Mrs. Douglas Gordon), Toronto; Miss Ethel Chapman, Toronto; Mrs. J. R. Fitcher, St. Thomas; Mrs. Gordon McPhatter, Owen Sound; Dr. C. D. Graham and Dr. Margaret S. McCready.

The staff of Macdonald Institute and the Advisory Committee have spent considerable time in investigating the needs for development of both undergraduate and post-graduate studies. With expected increasing enrolment of students, additional building needs have been considered, also.

#### Degree and Diploma Courses

No major course changes were made this year; for the second year, the Diploma Course terminated in May and its graduation exercises were held with the O.A.C. Diploma students on May 15, 1957.

#### Faculty

The resignations of Miss Marjorie Guilford, B.Sc. (H.Ec.) (Manitoba), M.A. (Columbia) and Miss Marcia Gillespie, B.Sc. (H.Ec.) (Alberta) led to the appoint-

ment of two new faculty members, Miss Eleanor Sanford, B.Sc. (H.Ec.) B.Ed. (Alberta), clothing and costume design specialist, and Miss Louise Poole, B.S., M.A. (New York), home management and clothing specialist. Miss Mary Singer, B.H.Sc., M.S. (Iowa) continued on leave of absence for post graduate studies in management and equipment at Ohio State University.

The retirement, in September, 1956, of Mrs. Annie E. Barber, Dean of Women at Macdonald Institute for twenty-five years, was recognized on several occasions, by students, staff and alumnae, all of whom paid tribute to her constant interest in and concern for students and alumnae, and for her untiring upkeep of the women's residences. A new appointment, Buildings Superintendent, was made, of Mrs. Norma E. Walker, B.A. (Manitoba). Miss Doris R. Baskerville, B.Sc. (H.Ec.) (Manitoba), M.S. (Syracuse), succeeded Mrs. Barber as Dean of Women and Student Counselor. This year, again, Macdonald Institute had the able assistance of one technician helper, Mrs. Ethel Thackeray.

### Promotions

Promotion of four staff members, from Assistant Professor to Associate Professor, was given to Misses E. L. Bray, M. Sanderson, O. M. Wallace, and M. Isabel Irwin; from Lecturer to Assistant Professor, to Misses G. Frank and D. Baskerville, and Mr. Gordon R. Couling.

### Departments of Work, Extension

The main departments of work are six — Foods and Nutrition, Clothing and Textiles, Home Management and Equipment, Art and Home Planning, Deaning including Social Science (Child Development and Human Relations courses) and Student Counselling, Physical Education. Many other courses, in Science and Agriculture, English and Economics, are taught by members of twelve O.A.C. departments.

In each of the six departments of home economics work, the Macdonald Institute teaching staff (at present, 15 in all) carried a heavy programme of undergraduate courses for a total of 195 students in home economics. In addition to the teaching load, carried with the aid of only one department assistant, the total of work accomplished is very commendable.

All staff members have contributed greatly to the community in answering approximately one hundred and fifty requests for information, particularly concerning foods and nutrition, home and institution planning and renovation, and home management and equipment problems. Several thousand citizens have been reached by sixty-five addresses, courses, seminars or discussions; sixty articles were prepared by staff, notably in the Art department, for the O.A.C. Review and newspapers.

Committee and advisory work by staff, largely on campus, but much in community and in professional associations, has required additional time and effort. Similarly, staff has been encouraged to attend and participate in eight professional conferences associated with textiles, clothing, and art, foods and nutrition, home management, university counselling and placement.

Staff co-operated in the special preparation of students for several public presentations of their work in child welfare clinics, adult education groups, and T.V. interviews.

Summer courses taken by staff were as follows: Miss M. Sanderson, Experimental Foods, Purdue University; Miss D. Baskerville, Seminar on Child Develop-

ment, Merrill Palmer, Detroit; Miss G. Frank, Textiles Workshop, Penn State University; Miss E. Jorgensen, Textile Printing and Ceramics Courses, Mexico and Macdonald Institute; Miss D. Baskerville and Dr. M. S. McCready, C.H.E.A. Preconference Course on Home Economics Communications, University of British Columbia; Misses E. Curran and M. Gillespie, Home Management, Michigan State University.

#### Experimental Studies and Research

The correspondence stimulated by publicity given to the Obesity Clinic run as a project for senior students by Miss P. Lyon has added greatly to this teacher's outside work. In the Foods Department also, special taste panels were developed for work on eggs, poultry and ice cream mix. The cooking of test roasts and the compilation of related data were further efforts in co-operation with an O.A.C. department.

In Nutrition, Dr. Irwin conducted further studies, using rats as experimental subjects, on the nutritional value of various Canadian flours, this work being used as a demonstration project with senior students; some experimental rat growth studies were demonstrated with diploma students, also.

In the Textiles Department, Miss Frank has continued studying the effect of sunlight (Fadeometer test) on curtain fabrics of varying fibre content.

The Dean of Women has collaborated with the Dean of Men in establishing O.A.C. norms for the Mental Measurements Tests given to entering students in September.

In the Art field, Professor Couling has worked assiduously in promoting educational research on the teaching of art, with art groups in this area, including extracurricular college groups.

#### Visitors

During the year several professional and art and craft groups held their meetings or short courses at Macdonald Institute. Among these were the Ontario Dietetic Association, Association of Textile Colourists and Chemists, The Five Counties Art Association, Community Programs of Ontario Department of Education. As in previous years, also, conferences of the Ontario Women's Institutes, the 4-H Homemaking Clubs and the Home Economics Service of the Department of Agriculture have been welcomed.

At the Diploma Graduation in May, 1956, the guest speaker was Dr. Helen Abell, Economist with the Economics Division, Department of Agriculture, Ottawa, a graduate of Macdonald Institute.



## *Ontario Veterinary College*

During the past fiscal year an Order-in-Council appointing an advisory board to be known as 'The Advisory Committee for the College' and to operate from April 1, 1956 was approved by the Lieutenant-Governor. This was in accordance with *The Ontario Veterinary College Act*, which came into effect in 1908 when the College, after being governed under private charter since its inception in 1862, was placed under the jurisdiction of the Minister of Agriculture. The Act gives authority for the appointment of an advisory board to assist the Minister in the management of the College.

The following appointments to the Committee were made:

- (a) the Deputy Minister of Agriculture, and the Principal of the College;
- (b) Dr. E. F. Johnston, Carp, and Dr. L. C. Swan, St. Catharines, for a term of three years;
- (c) Dr. J. K. W. Ferguson, Toronto, and Dr. K. F. Wells, Ottawa, for a term of two years; and
- (d) Dr. R. Gwatin, Ottawa, for a term of one year.

Five of the members of the Advisory Committee are also members of an advisory board that is composed of representatives from the three institutions on the Guelph campus.

During the year covered by this report, the Advisory Committee held five meetings and discussed a variety of subjects dealing with administration, education, research and extension work. It soon became apparent that discussion of the impact of changing times on the veterinary profession would occupy a great deal of the attention of this group of advisers. A primary emphasis on the diseases of the horse evolved into a teaching programme that included the diseases of all domestic animals; now there is a demand for specialists in veterinary public health, poultry pathology, food hygiene, small animal medicine and surgery, veterinary research, and other fields. This trend towards specialization within the profession requires a continuing review of the College curriculum, as well as a consideration of the necessity for changes in other phases of college activities. Discussion of these and allied subjects led to a unanimously expressed opinion that the undergraduate course given at the Ontario Veterinary College must not become a mere dispensation of facts, but must continue to provide a solid foundation of knowledge in veterinary science by the teaching of fundamental principles in the best tradition of higher education.

To do this it is necessary to attract the best teachers possible. It is a pleasure to report that progress in this direction is being made. During the past few years it has been the policy to assemble a teaching staff that would bring to the College a wide variety of experience obtained from universities in different parts of the world. This has been done in two ways: (1) by recruiting staff who had qualified abroad, and (2) by permitting staff members to pursue graduate training elsewhere. Graduates from the following universities and colleges are now members of the College faculty: Alfort, Belgrade, Bristol, Cambridge, Colorado, Cornell, Edinburgh, Glasgow, Illinois, Iowa, Liverpool, Manitoba, McGill, McMaster, Michigan,

Minnesota, Pretoria, Queen's, Saskatchewan, Sydney, Toronto, Western Ontario, Wisconsin.

## PERSONNEL

On March 31, 1957 the faculty of the College consisted of 48 permanent members, 6 temporary, and 3 part-time; and the staff—office, housekeeping, and infirmary—of 75 permanent members, 34 temporary, and 34 casual.

### Appointments

R. J. Julian, D.V.M., was appointed to the Kemptville Veterinary Laboratory as Regional Veterinarian; L. H. Lord, D.V.M., M.S. (Cornell), to the Division of Small Animal Medicine and Surgery, M. C. Connell, D.V.M., to the Division of Poultry Pathology, and D. H. G. Irwin, B.V.Sc. (Pretoria), to the Department of Anatomy, as Assistant Professor; G. D. Wetherill, B.Sc. (Edin.), M.R.C.V.S., to the Department of Medicine and Surgery, and D. L. Dungworth, B.V.Sc. (Liverpool), M.R.C.V.S., to the Department of Pathology and Bacteriology, as Graduate Assistant; Valerie N. Gordon, B.A. (Sydney), to the Library as Editor. K. J. Johnston, B.V.Sc. (Sydney), Dip. Bact. (London) of the Department of Pathology and Bacteriology at Sydney University, was a visiting lecturer in the Division of Bacteriology for three months.

### Resignations

Judith C. Ochalski, D.V.M., resigned from the Division of Poultry Pathology; T. D. Ford, D.V.M., from the Division of Pathology; D. M. Elliot, D.V.M., and G. D. Wetherill, B.Sc. (Edin.), M.R.C.V.S., from the Department of Medicine and Surgery; E. W. Gilchrist, M.R.C.V.S., from the Department of Anatomy; E. J. Bishop, Assoc. Memb. Inst. X-Ray Tech., from the Division of Radiology. A. J. Beale, M.D. (London), Dip. Bact. (London), having completed his term of employment with the Department of Pathology and Bacteriology, returned to England.

### Leave of Absence

T. J. Hulland, D.V.M. and D. G. Ingram, D.V.M., M.V.Sc., obtained leave of absence from the Department of Pathology and Bacteriology. They will pursue graduate training towards the Ph.D. degree; the former at the University of Edinburgh and the latter at Cambridge University.

### Degrees, Honours, and New Awards

G. R. Carter, D.V.M., M.S. (Iowa State) received the degree of D.V.Sc. from the University of Toronto; H. C. Rowsell, D.V.M., D.V.P.H., the degree of Ph.D. from the University of Minnesota; B. M. McCraw, M.A., the degree of Ph.D. from the University of Michigan. The British Royal Society of Health made Dr. J. K. McGregor a member, in recognition of his outstanding research work.

Dr. C. L. McGilvray has arranged for \$300 to be awarded yearly to a student registered in the School of Graduate Studies. He wishes preference to be given to students working on problems in small animal medicine and surgery. The new award will be called 'The Roy McGilvray Award'.

### Publications, Addresses, and Other Activities

Thirty-eight articles—sixteen from the Department of Medicine and Surgery, fourteen from the Department of Pathology and Bacteriology, four from the Division of Biology, and four from the Department of Parasitology—were published by veterinary and scientific journals during the year, some being presented at meetings or conferences before publication. A bulletin 'Cattle Lice and How to Control Them' was published by the Department of Parasitology.

Members of the faculty participated in several professional meetings, including the Tenth International Congress of Entomology and the Third International Congress on Animal Reproduction, and many conferences and annual conventions held in Canada, the United States, Jamaica and England.

Distinguished people visited the College from several countries of the British Commonwealth, Europe and the United States.

Tours of the College were made by students from the Camp Borden Medical Training Centre, the Ontario Teachers' College, and the final year of the pharmacy course at the University of Toronto and by representatives of the 4H Clubs, the Ontario Fur Breeders' Association, the Women's Institutes of Ontario and the High School Open House. Some of the groups also toured the regional laboratories.

### COLLEGE FUNCTIONS

#### The Annual Convocation and the Baccalaureate Service

Fifty-seven students received the degree of Doctor of Veterinary Medicine at the Annual Convocation, which was held on May 18, 1956. After the ceremony, W. A. Hagen, D.V.M., M.S., D.Sc., Dean of the New York State Veterinary College, addressed the students.

The Baccalaureate Service for the 1957 graduating class was held on Sunday, March 24th, the sermon being given by J. Ray Houser, M.A., D.D., President and Dean of the Lutheran Theological Seminary, Waterloo.

#### The Student Chapter, American Veterinary Medical Association

The Student Chapter, A.V.M.A., held its annual banquet on February 25th, the guest speaker being Mr. D. Henshaw of the MacLaren Advertising Agency, Toronto. The students held an "At Home" at the College on the same evening and visitors saw samples of the work done at the College and colourful displays in the various departments.

### ALUMNI ASSOCIATION

The Seventh Annual Meeting of the Alumni Association was held at the Royal York Hotel in Toronto on January 24th. The total membership of the Association is now 1,174; the entire graduating class of '56 joined, which brought the total of new members for the year to 155.

### COURSES

Details of the courses given to students studying for the degree of Doctor of Veterinary Medicine are shown in the reports of the departments.



### Courses for Students in the School of Graduate Studies

Members of the faculty supervised the work of students studying for the post-graduate degree Master of Veterinary Science under the direction of the School of Graduate Studies: four are working with the Department of Pathology and Bacteriology, one with the Division of Biology, and two with the Department of Medicine and Surgery.

Since 1955 seven students have enrolled in the School. Two of these completed the requirements and received the degree of M.V.Sc. at the 1957 Spring Convocation and two hope to receive their degrees at the Fall Convocation. The other three students are in the first year of their studies. The final selection has not been made for the 1957-58 session, but it seems probable that four more students will be accepted.

### Extension Courses

Two very intensive courses for veterinarians were organized by the Extension Group and presented by the Departments of Medicine and Surgery, Pathology and Bacteriology, and Parasitology: a course in laboratory procedures in which representatives from diagnostic laboratories in each province were given instruction in the latest diagnostic techniques; and a course dealing specifically with the reproductive disorders of the cow. This year, as in previous years, these courses were of necessity limited to a small number of veterinarians.

A course on the prevention and cure of animal diseases was arranged through Dr. E. B. Meads of the Regional Laboratory at Kemptville and presented by members of the clinical staff of the College and the head of the Department of Nutrition at the Agricultural College. This was a new course: its success—an average of thirty veterinarians attended the lectures on each of the four afternoons on which the course was given—has encouraged the Group to arrange a repetition and perhaps an extension of the course for 1957-58. At the laboratory in Ridgetown, more than 50 veterinarians attended the Fall Clinic of the Western Ontario Veterinary Association. Arrangements for the Clinic were made by the Regional Veterinarian, Dr. G. R. Doidge.

Field training for Veterinary Public Health Diploma students was arranged in co-operation with members of the Animal Husbandry and Dairy departments of the Agricultural College and of the Medicine and Surgery department of the Veterinary College.

Instruction was given to Associate Course members at the laboratories in Kemptville and Ridgetown, and at the College in Guelph; in Guelph, two one-hour lectures were given on each week of the Spring term by the Extension Officer. The Extension Group also arranged for lectures to be given by the faculty of the College to veterinarians at meetings of the local veterinary associations.

### Lectures for Agricultural Students

Lectures on veterinary subjects were given by the faculty to degree course, associate course and short course students of the Ontario Agricultural College.

### Lectures in Artificial Insemination Units

Courses in artificial insemination of cattle were given to licensed technicians in artificial insemination units. The lectures and practical instruction were given by

members of the Veterinary and Agricultural Colleges and by personnel from artificial insemination units.

### Discussions with Livestock Breeders

In November, the Faculty Association invited a number of livestock breeders and veterinarians to form a panel; this was done with the object of inviting general discussion on the value of present veterinary services to the livestock industry. Members were Mr. George Drennan, Fieldman for the Holstein-Friesian Association, Guelph; Dr. A. J. MacKinnon, Galt; Mr. Rufus Gardhouse, a breeder of Shorthorn cattle at Milton; and Mr. J. A. Houck, a breeder of Holstein-Friesian cattle at Brampton. Representatives of the faculty joined in the discussion and the panel brought to their attention the problems of veterinary service from the point of view of the livestock breeder.

### EXTENSION WORK

Details of the educational programme organized by the Extension Group are given under the heading 'Courses'.

Field work, including the investigation of outbreaks of disease, which was begun by the Extension Group in 1953, was continued. Farmers in the Cochrane-Hearst areas were provided with essential veterinary services, e.g., the vaccination of calves. Assistance was given to the agricultural representative for these districts in the organization of an artificial breeding programme and the Extension Officer advised farmers on management and breeding problems. In all this work, the Group worked in close association with Mr. E. I. McLoughry, the Agricultural Director of Liaison, and the agricultural representatives.

An investigation was carried out on the nutritional deficiencies in cattle on Manitoulin Island, following an appeal from the practising veterinarian on the island, Dr. S. I. Morrison, who stated that one-third of his practice consisted of dealing with problems in nutrition. As a result of the investigation, a project has been organized by the Extension Group in co-operation with the Extension Branch of the Department of Agriculture and departments of the Veterinary and Agricultural Colleges, in an attempt to find a practical solution to this problem.

The Extension Officer continued to organize veterinary diagnostic work throughout the province: the work of the Regional Laboratories at Kemptville and Ridgetown was co-ordinated with that of the laboratories in Guelph and a close contact was maintained with the personnel.

In June, 1956, in accordance with the Provincial Brucellosis Control Act of 1953, it was decided to transfer the supervision of the Federal-Provincial Brucellosis Control Programme from the Ontario Veterinary College to the Provincial Veterinarian's Office in Toronto and the Extension Group assisted in this change-over. The Programme had been under the control of the College since it was put into practice in 1950 and under the direct control of the Extension Group since 1952. The close contact the Group maintains with livestock owners and veterinarians had ensured its success.

### RESEARCH

In October a plan for a department of research was discussed and approved. It was decided that Drs. H. G. Downie, H. C. Rowsell, and G. R. Carter, and Mr.

F. H. S. Newbould, should form the nucleus of the new department. Plans were put into operation at once so that the department could function by April 1st. The new department will incorporate the Research Group that was set up within the Department of Bacteriology in 1945. It will work in conjunction with the Research Committee, the function of which is to plan the over-all research programme of the College, and the Joint Committee of the Connaught Medical Research Laboratories and the Ontario Veterinary College, which allows the College to keep in close touch with the research projects of the University of Toronto.

It has always been realized that more time should be given to research and that a properly organized research programme should be arranged. In 1922, on the occasion of the move from Toronto to Guelph, Dr. C. D. McGilvray stated that "this transfer has enabled more attention to be given to research and investigational work". In 1928 he stated that the livestock industry would favourably support increased facilities for research work in animal diseases and that the services of a disease research department were definitely required. However, few facilities have ever been provided for full-time research projects and those which have been carried out were done as time from teaching permitted. The present formation of a department of research will allow trained personnel to work full time on fundamental research problems and it is hoped will provide a stimulus for an expanded programme of research in the other departments.

#### Departmental Research

Departmental research projects will continue: work with environmental carcinogens is being carried out by the Division of Biology on grants from the National Cancer Institute; with insect repellents and attractors by the Department of Parasitology on a grant from the Defence Research Board; and on semen preservation by the Department of Medicine and Surgery on a grant from the Ontario Research Foundation.

Other departmental research projects are listed in the reports of the departments.

\* \* \* \*

The faithful service of the professional, administrative, technical and secretarial staff is acknowledged. The continued interest and support of Dr. C. D. Graham, Deputy Minister of Agriculture, is of great value in the administration of the Ontario Veterinary College.



## *Horticultural Experiment Station*

During the year, the most noteworthy item concerning the Station was the commencement on August 1, 1956 of the erection of the long-needed Laboratory and Office building. Its situation is immediately north of the present Extension Services building. It is expected that it will be ready for occupancy late in 1957 or early in 1958.

There were a number of changes in the technical staff in 1956-57. R. A. Cline, a 1956 graduate of O.A.C. in Chemistry, was employed on May 1, 1956 to work on plant nutrition problems, particularly leaf analysis as a guide to fertilizer practice. H. J. Reissmann, a graduate of Kiel (Germany) University, came on the same department February 1, 1957 to handle the routine analyses. He replaced Miss T. B. Hagen who resigned on December 1, 1956. P. J. E. Albers, who had been employed previously as Gardener, came back on February 1, 1957, as a Laboratory Technician to work on vegetable crops with Dr. Wiebe. Miss D. M. Rhodes came at the same time to replace Miss L. Kribs and to be associated as a Laboratory Technician with Dr. Kerr on breeding work. On February 1, 1957 Dr. E. F. Palmer retired after over 40 years of distinguished service as Director of the Station. His successor is Dr. W. H. Upshall, formerly Chief Research Scientist in charge of the Station research work.

At the Horticultural Products Laboratory, Miss E. M. C. Calder resigned on April 30, 1956 and Miss S. Head was appointed on October 1, 1956. Mrs. M. L. Simpson, after a brief absence, returned as Research Scientist on May 1, 1956. A. Emodi, a graduate of University of Budapest (Hungary), was employed as a Laboratory Technician in January, 1957.

### PEACH CLIMATES IN ONTARIO

(in co-operation with Ontario Research Foundation)

The climate of the Niagara Fruit Belt as it affects peaches has been compared with that in other parts of Southern Ontario. During the winter, the fruit buds of peaches seldom survive  $-12^{\circ}\text{F.}$ , while  $-20^{\circ}\text{F.}$  is usually fatal to the trees. In the spring, developing blossom buds are killed by a temperature between  $23^{\circ}\text{F.}$  and  $26^{\circ}\text{F.}$  From official weather records for the 30-year period 1925 to 1954, the odds of experiencing the above temperatures or lower are tabulated. By grouping winter and spring frequencies of bud injury, the odds in 30 of losing the crop are estimated to be about 3 at Vineland, 5 at Harrow, 6 at Welland, 10 at Goderich, 12 at Forest, London and Port Dover and 13 at Simcoe. Along the north shore of Lake Erie, Kent and Essex counties, where peach land is limited, a less severe climate is enjoyed than Elgin and Norfolk counties, where good soil is abundant. A belt along Lake Huron, south of Goderich, more than favourably compares with the latter area and is almost similar to the Welland and Ridgeway areas in this respect. No other part of the province can be considered for commercial peach production. To be more successful, a peach venture in Southern Ontario should be located fairly close to a large body of water, preferably on a protected site with good air-drainage and on good well-managed land. The climatic superiority for peaches of the Niagara Fruit Belt, confirmed and defined by this study, points up the desirability of reserving the best lands in this belt for the peach crop.

### Variability in Bartlett Pear Fruits

A standard Bartlett pear orchard with suitable pollinators was planted at the Station in 1922. When it came into bearing, much variability from tree to tree became evident—size of tree, cropping, shape of fruit, and eating quality. It was so striking that different strains were suspected within the variety. Consequently, five “good” trees were selected and five “poor” trees adjacent to them. Scions were taken from each tree and grafted on its opposite number. In addition, buds were taken from each tree for propagation in the nursery.

When the grafts came into bearing, the fruits were in every way like those of the stock tree, not like the original tree from which the scions were taken. Similarly, the young trees propagated from “poor” trees gave just as good results as those propagated from “good” trees. It seems to prove conclusively that strain was not a factor in this orchard—that environmental conditions, soil, rootstock, or both, were responsible for the wide differences observed in tree and fruit characters.

When the original orchard was mulched and fertilized in later years, the initially observed differences tended to disappear. This indicates that good nourishment tends to compensate for poor soil and poor rootstocks.

### Malling Apple Rootstocks

Figures supplied by J. V. Shannon, Ontario nursery inspector, show that nearly 200,000 Malling rootstocks were budded in Ontario nurseries in 1956. In addition, there was probably a sizeable quantity budded on farms for local use. The total would likely amount to more than the number of standard (seedling) rootstocks budded in the same year. This shows the coming importance of the smaller-sized apple tree as seen by the nurseries.

Three rootstocks are being used in about equal proportions—the very dwarfing Malling IX, the semi-dwarfing Malling VII, and the slightly dwarfing Malling II. Roughly, they are  $\frac{1}{4}$ -,  $\frac{1}{2}$ -, and  $\frac{3}{4}$ -size trees respectively. Trees on Malling IX come into bearing in the second or third year in the orchard but must have continuous support to keep them upright. Trees on Malling VII are only moderately well anchored and perhaps only in well-protected locations should they be grown without support. Budding high on the rootstock and planting deeply would probably be helpful in keeping the trees upright and might make support unnecessary. The problem of trees blowing over might also be less serious on the heavier soils. At Vineland, there has been no need of support for trees on Malling II.

Judging by their present size relationship to standard trees, it is recommended that the planting distances for trees on each rootstock be approximately as follows:

- Malling IX—10' x 12' if trained to four wires.  
12' x 20' if tied to individual posts.
- Malling VII—20' x 30'.
- Malling II—30' x 40'.

### Leaf Analysis for Fruit Trees

The leaf-analysis research programme was continued in 1956. As in 1955, 104 grower peach orchards, 110 grower apple orchards and 65 grower vineyards were sampled, and these samples, together with those of other research projects, totalled over 1,000.

Results indicate that the cool, wet season of 1956 resulted in leaf-nutrient levels varying considerably from those from the 1955 sampling. Leaf nitrogen and potassium were much higher in the 1956 samples.

Plans are now underway for the initiation of a grower leaf-analysis service, at least for grapes, peaches, and apples, in 1958. Completion of the new laboratory and administration building at the Station will assure adequate space and facilities for this work. With the initiation of this service, much of the present guesswork will be taken from the fertilization of orchards and vineyards, the result being more efficient fruit production.

#### Breeding for High Vitamin C Content in Tomatoes

Vitamin C (ascorbic acid) is the only vitamin in which the diet of many Canadians is deficient. Tomatoes are an excellent source of Vitamin C but commercial varieties still have only about half the concentration found in citrus fruits. Beginning in 1942 with the tiny Red Currant tomato as the source of high Vitamin C, standard breeding procedures such as back-crossing, selection and line-crossing have been followed. Lines of commercial size have been obtained with two to three times the normal Vitamin C content. Most of these lines, however, do not yet have the quality or productivity of commercial varieties.

Preliminary data indicate that the Vitamin C content of plants with high pigmentation,  $hp_1 + hp_2$  is 20% to 25% higher than that of the normal segregants. This is probably a pleiotropic effect of the  $hp$  genes.

#### The Cooling of Peaches in Paperboard Containers (Products Laboratory)

Newly designed paperboard containers for peaches were adopted by an Ontario Peach Marketing Agency. It was necessary to determine the cooling rates within loaded containers under various environmental conditions. How to ventilate the containers without undue weakening was of prime interest.

A study made at the request of the Agency in 1956 in the Horticultural Products Laboratory provided the needed information in a sufficiently generalized form that the data has fairly wide application.

#### McIntosh Apples as Canned Pie Slices (Products Laboratory)

The McIntosh apple is not generally regarded as suitable for baking purposes. But as part of a programme seeking uses for this variety, they were tested as canned pie slices.

Modifications of some known procedures resulted in a canned product which, when made into pies, compared very favourably with canned apple slices now available commercially. The latter are usually made from varieties ordinarily accepted for cooking purposes. The McIntosh product is recommended to processors for trial. The product was made from McIntosh collected in three widely separated areas and from a wide range of maturity of fruit.



## *Kemptville Agricultural School*

Instruction in Agriculture and Home Economics at the School and extension work in Eastern Ontario continue to be the primary functions of the Kemptville Agricultural School. Definite changes have taken place in the organization and operation of a successful farm business. To meet these conditions, the content of courses offered has been revised periodically but the practical application of results in research and experimental work to farm problems remains basic in all courses.

Part time employment off the farm at attractive wages has resulted in changes in methods and practices on many farms and a change in the outlook of the farmer or farmer's son involved. Despite this situation which tends to draw young people away from agriculture, attendance at K.A.S. has been well maintained. A sizeable increase occurred in the enrolment in the junior year of the two-year course in agriculture as compared to the preceding junior year. Enrolment was as follows:

Agriculture—2-year course—Juniors .....	37
Agriculture—2-year course—Seniors .....	21
Advanced Course in Agricultural Mechanics .....	10
Home Economics—one-year course .....	11
Home Economics—two-year course .....	5
Dairy Course .....	13

A survey over the past five-year period of the graduates in the two-year agricultural course reveals that 91% are working in some phase of agriculture, with 53% actually farming. Those graduates who wish to work in agriculture but who have not the necessary finances to establish a farm business find little difficulty in securing good positions. Likewise the young women graduating in Home Economics have been securing positions as food supervisors in hospitals, tourist businesses and in clothing services. The Advanced Agricultural Mechanics course initiated 3 years ago has proven very popular from the viewpoint of both the student and possible employers.

Extension work in agriculture has taken considerable time of staff members. In co-operation with and on the request of the Agricultural Representative Service, the K.A.S. instructional staff attend and assist with many county programmes and projects.

The agricultural organizations in Eastern Ontario make use of the facilities available at the School for many of their functions. The residence and classroom facilities were used by the Civil Service Commission of Canada for a one-month Senior Officers' Course for Canadian Government officials, from August 20 to September 14.

The lecture courses in farm management for the senior year in agriculture, in farm business for the advanced agricultural mechanics course, and one course in animal husbandry for the junior year in agriculture were delivered by the principal. As chairman of the sire purchasing committee of the Eastern Ontario Cattle Breeding Association and director of the Central Canada Exhibition Association and Ottawa Winter Fair, considerable time was spent in addition to administrative duties at the School. Numerous meetings have been addressed, several cattle shows judged, including 4-H Achievement Days and Judging Competitions.

Some 34 friends and organizations have contributed bursaries (Atkinson Charitable Foundation), Scholarships (individuals, Service Clubs, Counties), and prizes (K.A.S. Alumni). These have been very much appreciated by the young women and young men receiving this assistance. On their behalf the K.A.S. makes grateful acknowledgment.

The K.A.S. is also very appreciative of the assistance and co-operation of the following:

Agricultural Representatives Branch; Ontario Department of Lands and Forests; Ontario Veterinary College; Ontario Fruit Branch; Ontario Dairy Branch; Central Experimental Farm; Ontario Agricultural College; Production Services, Canada Department of Agriculture; Ontario Home Economics Service; Ontario Field Crops Branch; the Junior Farmer News; the Agricultural Weeklies; the Daily Press; and the Radio Farm Broadcast.

### AGRICULTURAL MECHANICS DIVISION

This year, changes were made in the Advanced Course curriculum to include a course in the operation of earth-moving machinery. The course included daily maintenance as well as operation. Each student actually received 18-20 hours of driving time on a light and heavy bulldozer.

During the year the work of this division consisted of lecturing on agricultural engineering subjects to the students in the junior and senior years in Agriculture and the Advanced Course in Agricultural Mechanics during the school term and doing field work and agricultural engineering extension throughout the year.

The following subjects were taught during the school term: drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, use of explosives, tinsmithing, metallurgy, forging, welding, plumbing, farm machinery, motor mechanics, woodworking, farm buildings, rope work, care and sharpening of tools, and the care and operation of earth moving machinery.

The Advanced Course in Agricultural Mechanics was taken on a number of field trips of which two were through the foundries of Dominion Engineering Works, Montreal, and the International Plowing Match.

This division is also indebted to the following for placing with this division machinery on consignment for use in classes and demonstrations: Massey-Harris-Ferguson Co. Ltd., International Harvester Co. Ltd., Cockshutt Plow Co. Ltd., Allis-Chalmers Co. Ltd., J. I. Case Co. Ltd., Goodison Industries Ltd., Beatty Bros., Niagara Brand Spray Co., Geo. White Co. Ltd., Spramotor Co. Ltd., London Concrete Co. Ltd., Sass Manufacturing Co., F. E. Myers Co. Ltd., DeLaval Co. Ltd., Geo. E. Crothers Co. Ltd., W. L. Ballentine Co. Ltd., United Co-operatives of Ontario, Ketchum Manufacturing Co. Ltd.

### Extension and Field Work

The extension and field work conducted by this division consisted chiefly of drainage service, building service, 4-H Tractor Clubs, agricultural night classes, Junior Farmer Mechanics Clubs and farm meetings.

Under drainage service, 370 farmers were called on and received some type of drainage assistance. Blueprints for 105,593 feet of profile and systematic drainage plans for 4,433 acres of land were prepared for farmers of Eastern Ontario. Fifty drainage installations were inspected. During the year this division

co-operated with Agricultural Representatives in planning and conducting 35 drainage field days. During the year surveys were made and installations were completed for nine farm ponds.

Under building service, 115 farmers were visited and given assistance and advice on ventilating stables, constructing new or remodelling farm buildings. Fifty-five building plans were prepared and distributed.

Other engineering extension included surveying and advising on the layout and installation of septic tank and sewage disposal systems. Septic tank forms are loaned from the office of the Agricultural Representative or from this division. Also, extension work in this division includes advising on the installation of water systems, the layout, construction and equipping of bathrooms, planning and checking electric wiring installations and assistance in adjusting and repairing farm machinery.

Two staff members of this division acted as instructors and supervised twelve 4-H Tractor Clubs which had a total membership of 155 members. They attended club meetings, conducted 12 achievement days, conducted coaching classes and visited the majority of these members at their homes.

During the winter months this division co-operated with the Extension Branch, Ontario Department of Agriculture, in supplying instructors at 4 night classes, conducted at Tweed, Athens, Metcalfe and Eganville, on the following subjects: gas welding, electricity, farm machinery, chain saws, farm power, drainage and farm building. These classes were held one night a week for 12 weeks. The attendance ranged from 4 to 15 for each class. An extra six nights in arc welding were conducted in conjunction with the night classes at Athens.

During the year, this division supplied speakers for three Junior Farmer Mechanic Clubs which were held at Renfrew, Pakenham and Ottawa. The subjects covered were haying, tillage and harvesting machinery, farm ponds, stable ventilation, barn construction for dairy and beef cattle housing, and farm safety. The attendance ranged from 8 to 20.

During the year, speakers were supplied for a large number of farmer meetings which included breed association barn meetings, county spray schools, council meetings and ditch meetings. They were addressed on stable ventilation, misuse of electric wiring systems, drainage, and other engineering subjects. Staff members of this division have prepared and delivered a number of radio talks and television presentations.

#### ANIMAL HUSBANDRY DIVISION

In addition to the lecture and laboratory work carried out with the students, the animal husbandry division is responsible for the management of the farm and extension work in livestock.

The cropping season was a most unusual one with seeding being much later than average. In spite of the late season, excellent crops were harvested with the exception of grain corn, which was badly frosted early in September, with the result that it was not mature enough to pick. It was made into silage later in the fall. Some green feeding with the dairy herd was again carried on with satisfactory results. About 100 tons of grass silage was put up, with 50 tons in a horizontal silo and the balance in a stack. The silage in the horizontal silo was self-fed to the heifers. Not as much trouble was experienced with freezing as corn



silage was put on top of the grass. There was sufficient heat from the corn to almost eliminate freezing.

Green feeding or mechanical grazing was done in a limited way with the dairy herd. A wagon rack 16 feet in length and 7 feet wide was used so that the cattle could feed on both sides. From observations made to date, this size of rack will handle 25 cows, of various ages and breeds, quite satisfactorily. It was not quite large enough to handle a 30-cow herd to allow sufficient feeding space.

Demonstrations are being continued using the chisel type plow, various rates and methods of seeding grasses and legumes and the handling of forage crops. The chisel plow was used almost entirely in the fall to break up the land. Only a small acreage was plowed with a mould-board plow.

The crops on the farm included 8 acres of grain corn and 3 acres of soybeans. The grain corn did not mature sufficiently to pick, but made excellent silage.

The swine herd is entirely of the English Yorkshire breed. There was only a fair demand for breeding stock during the year.

The sheep flock consists entirely of the North Country Cheviot breed. The Suffolk ewes were sold late in the fall.

All the milking herd was entered on R.O.P., with 31 records being completed during the year on twice-a-day milking. Two cows in the herd received long-time production certificates — one a blue seal certificate with 131,115 pounds of milk and 4,831 pounds of fat in eight lactations, and the other a red seal certificate with 115,166 pounds of milk and 4,234 pounds of fat in seven lactations.

#### *Herd Average*

<i>Breed</i>	<i>Number on Test</i>	<i>Lbs. Milk</i>	<i>Lbs. Fat</i>	<i>Average Test</i>
Holstein .....	23	12,710	527	4.14%
Ayrshire .....	5	7,226	311	4.3 %
Jersey .....	3	6,808	403	5.9 %

#### *Herd Index*

	<i>Milk</i>	<i>Fat</i>
Holstein .....	113	131
Ayrshire .....	94	97
Jersey .....	96	105

#### *Number of Animals in various age groups on which average is based*

<i>Breed</i>	<i>Mature</i>	<i>4-yr. old</i>	<i>3-yr. old</i>	<i>2-yr. old</i>
Holstein .....	7	1	3	12
Ayrshire .....	1		2	2
Jersey .....		1	1	1

All animals on the farm were available for student work and as well are used by various farm groups from the surrounding area.

In addition to the lecture and laboratory work with the students and supervision of the farm, much time is devoted to extension work. The following is a summary of the meetings attended:

Meetings addressed .....	10
Fairs, Achievement Days and Judging Competitions .....	12
Meetings as committee member .....	20
Groups visiting farm only .....	10

In addition to the meetings attended, assistance was given in the following ways:

1. Secretary, Ottawa Valley Sheep Breeders' Association.
2. Secretary, Eastern Ontario Yorkshire Breeders' Association.
3. Member of the Sheep and Swine Committee of the Central Canada Exhibition and the Ottawa Winter Fair.
4. Member of the Junior Committee of the Ottawa Winter Fair.
5. Member of the Ayrshire Bull Buying Committee for the Eastern Ontario Cattle Breeding Association.
6. Member of the Committee of the Eastern Ontario Soil and Crop Improvement Associations.
7. Numerous requests for information on livestock and livestock feeding were answered by letter and office calls.

## CHEMISTRY, SOILS AND FERTILIZERS DIVISION

The activities of this division are summarized under the following headings:

### 1. Lecture and Laboratory Classes to Regular Students

Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in Agriculture; mathematics, soils and farm planning to the advanced Agricultural Mechanics course; and chemistry to the junior and senior classes in Home Economics. Laboratory periods in chemistry, soils and fertilizers are given in conjunction with the lecture classes.

### 2. Extension

(a) During this period 2,336 samples of soil were received for examination. Rapid determination tests were made for reaction, organic matter, phosphorus, potash, calcium and magnesium. Reports covering the recommendations for fertilizer use, agricultural limestone requirements and cultural practices were forwarded covering the samples received. Up-to-date equipment enabling the determination of the newer procedures in rapid testing have been installed, providing a uniform relationship with other soil testing laboratories.

#### *(b) Demonstrational and Experimental Field Work*

(1) Test plots using two qualities of agricultural limestone and varying rates of application were laid down in Frontenac County.

(2) A two-day Soils Judging Competition was held in Lennox and Addington County in co-operation with the County Soil and Crop Association and the District Veterans' Land Act Inspectors.

(3) Test yields and observations covering the fertilizer use on various farm crops involving variations in rate of application, methods of application and concentration of fertilizer formulas were carried out.

#### *(c) Meetings Attended*

During the year 43 meetings were attended where problems relating to soils, fertilizers, lime and farm fertility practices were discussed.

## DAIRY DIVISION

The course in dairying given to the senior class in agriculture in the fall term was altered to allow more laboratory work to be given.

The field staffs and officials of the Milk Products Board and the Milk Control Board held a joint three-day meeting at the Dairy division on April 23, 24 and 25, 1956. A new organization of commercial dairy fieldmen was also formed at this time.

The sixty-third session of the three-month dairy course was held during January, February and March with 13 students in attendance. Of this number 12 were successful in obtaining their diplomas. Three received first class honours, eight second class honours and one pass standing. Students were present from the following counties: Dundas 2, Glengarry 1, Hastings 2, Leeds 1, Lennox 1, Prescott 1, Renfrew 1, Russell 1, Stormont 3.

The Montreal Provision Trades Association donated sixty dollars which was used for a series of merit prizes for high standings in various subjects.

The free lactic culture service was continued throughout the year, 341 cultures being supplied to 78 cheese factories and dairy plants.

The research project begun in 1955 aimed at learning methods of preventing wet and soft end defects in Cheddar cheese was completed in December, 1956, and reports on the results were presented to interested groups. In cases where cheese are pre-disposed to develop wet or damp ends, removal of the mould growth by scrubbing lightly with a warm tri-sodium phosphate solution followed by drying and waxing largely prevented these defects. The soft end defect was not prevented by this treatment, however, and it appears that its control is dependent upon better sanitation in cheese factory curing rooms.

A number of cheese factories manufacturing block shaped Cheddar cheese from pasteurized milk have experienced difficulty due to open texture. This problem was studied from the point of view of using better starters and improved manufacturing methods. Employing starters which produced considerable quantities of gas as well as under salting, insufficient pressing and salting and curing at too high temperatures were all shown to be involved in producing this defect.

A survey was made of the fat and solids-not-fat content of the milk of 72 cows in four herds receiving special mineral supplements containing extra copper. These tests were made during August, September and October. It is planned to re-survey these herds after mineral feeding has been continued for a full year. Many of the samples examined were unusually low in both fat and solids-not-fat. The survey was conducted in co-operation with the Regional Veterinary Laboratory of O.V.C. and the Department of Nutrition, O.A.C., under whose direction the mineral feeding is being done.

At the request of the Dairy Commission results were compared of testing 300 milk samples by the methylene blue, resazurin and standard plate counts. Many of the samples were also examined for the presence of starter inhibiting substances and for staphylococci. It is planned to repeat this experiment at two other seasons of the year. The above tests were largely made during November.

A new separator-clarifier was purchased during the year.



## ENGLISH AND ECONOMICS DIVISION

### Instruction

Students in agriculture and home economics received instruction in English, public speaking, economics and civics. English and public speaking classes were taken with the Advanced Course (Agricultural Mechanics). Staff members acted as advisers to the Literary Society which produced special programmes, including public speaking and panel discussion contests and two one-act plays that entered a local drama festival. The School year-book and a School paper also received direction.

### Extension and Public Relations

This division co-operated with the Farm Economics Branch in completing the second year's records in connection with a tile drainage study in Eastern Ontario.

Addresses to Service Clubs, Women's Institutes and Junior Farmers reached an estimated 1,672 persons. Several visits were made to secondary schools. Over 250 specially invited students from 13 secondary schools visited the Kemptville Agricultural School for one day.

Junior Farmer Conferences, Provincial Camp, debates and public speaking contests received help from this division.

The Ontario Department of Agriculture Radio Service secured 47 tape recordings during the year and a number were released for other radio programmes.

Over 60 visits were made to prospective students by members of this division.

Advertising in press, radio, the preparation of news releases, calendars and pamphlets were other special responsibilities.

### Library

Complete administration of the library involves more work each year as the facilities are increased. Planned programmes for student reading have increased the circulation of books. New shelf space must be planned for in the stack room.

### School Administration

This division shares in many of the general administrative duties such as graduation details, scholarships, awards, bursaries, exhibits and secretarial work.

## FIELD HUSBANDRY DIVISION

In addition to teaching all of the courses in field husbandry and weeds outlined in the Kemptville Agricultural School calendar, the field husbandry instructor was actively engaged in extension and experimental work.

### Summary of Extension Work in Field Husbandry

Addressed farmer groups on 36 occasions. These included annual meetings and summer twilight meetings of several county Soil and Crop Improvement Associations in Eastern Ontario, seed fairs, field days and conferences.

Assisted in the organization and programme of four regional Pasture Tours in Eastern Ontario.

Assisted in planning the programmes and in staging the annual Crop Improvement Conference and Weed Control Conference at the Kemptville Agricultural School.

Judged grain corn clubs and grain club exhibits; judged at seed fairs.

Considerable time was required in answering numerous requests for advice and information on crop production and weed control problems by correspondence, telephone, office calls and personal visits.

Several radio broadcasts were prepared and recorded for the Ontario Department of Agriculture Radio Service. Assistance was provided in the preparation of circulars and bulletins.

### Experimental Work in Field Husbandry

In order to co-ordinate the experimental work undertaken at the Kemptville Agricultural School with that being done at other experimental stations in the Province, it has been necessary to serve on several committees and to attend the annual committee meetings, which include:

- (1) The Ontario Corn Committee
- (2) The Ontario Committee on Field Crop Recommendations
- (3) The National Weed Committee (Eastern Section)
- (4) The Eastern Canada Cereal Workers' Committee
- (5) The Ontario Committee of Forage Crop Workers
- (6) The Ontario Soybean Committee
- (7) The Ontario Advisory Herbicide Committee

This committee work requires 15 days in attendance at meetings and an equal amount of time to assemble and prepare experimental data.

The only reason that one man has been able to supervise and conduct so much experimental work along with his other duties has been the excellent co-operation and assistance received from the Ontario Agricultural College and the Central Experimental Farm in processing much of the material and the data from the tests.

The experimental programme at the School consists mainly of crop testing with some herbicide evaluation work undertaken as time and staff permit. The following statistics will give some appreciation of the nature and scope of the experimental work under way in the Field Husbandry division of the Kemptville Agricultural School.

986 individual plots of varieties of oats, barley, mixed grain, soybeans, potatoes, grasses, red clover, alfalfa, and birdsfoot trefoil.

200 individual plots of grass-legume mixtures.

120 individual plots of grain corn hybrids.

180 individual plots of silage corn hybrids.

125 varieties of grasses and legumes are under observation in nurseries.

In addition to the crop testing programme at the Kemptville Agricultural School, seed is assembled for outside tests of grain corn, silage corn, soybeans, oats and barley. These plots are sampled, yields calculated and data supplied to County Crop Improvement Associations.

## HOME ECONOMICS DIVISION

During the school year from October 9th, 1956 to April 12th, 1957 instruction was given in the two-year diploma course and in the one-year homemaker course in Home Economics.

Students in Home Economics were enrolled from eleven counties and from the Province of Quebec.

Regular classes of instruction, along with practical work, were given in home management, nutrition, foods, child care, health education, home nursing, family living, applied arts, textiles, clothing and home furnishings.

The co-operation of other divisions providing instruction in English, civics, chemistry, bacteriology and floriculture to Home Economics students is much appreciated.

Films and field trips were used to supplement regular class room instruction.

The K.A.S. Royal show gave opportunity for display of various phases of Home Economics study. The spring fashion show also displayed achievements of Home Economics students to a large group of interested men and women.

Supervision and furnishing of the students' residence and dining hall are the responsibility of this department. The number of meals served to students and visiting groups during the year was approximately 52,000.

Many visiting groups were entertained, their stay in residence varying from one day to four weeks in duration.

Extension services included:

- talks and demonstrations to various women's groups such as Women's Institutes and church organizations.
- judging at fall fairs and local high school achievement day.
- Judges' Forum for lady judges.
- talks at Career days at two district high schools.
- open house programme for visiting secondary school students.
- visits to prospective students.

## HORTICULTURE DIVISION

During the school term a course of lectures, laboratory work, and practical instruction was given to the students in Agriculture. The instruction covered work in horticulture, botany, entomology and plant pathology. During the winter term a series of lectures on floriculture was also given to the senior students in Home Economics.

During the summer months this division is responsible for the maintenance of 27 acres of campus, 15 acres of tree fruits and about 2 acres of small fruits and garden.

A replicated strawberry variety and seedling test was set out in 1956. Only virus free plants of 0-481, 0-483, 0-484, 0-487, Sparkle, and Senator Dunlap were used and were provided by the Horticulture Division, Central Experimental Farm, Ottawa. Yield data in pounds will be recorded for each plot in 1957.

In the apple orchards, three different fungicide programmes were carried out to demonstrate the use of the various fungicides for apple scab control. In one



orchard, Crag, Ferbam and Captan were used. In another Vancide A and M were used. In a third orchard, Phygon, Ferbam and Captan were used. All three programmes were successful and no treatment was significantly better than any other.

During the early summer months the apple spray service letters for local growers originated from this division. In addition some 152 calls were made in an advisory capacity to the apple growers in the St. Lawrence Valley. The purpose of these visits was to provide information on apple insects and diseases.

Upon request, 21 illustrated talks were given to community and church organizations, Junior Farmer groups, Women's Institute groups, etc., on the subject of "Community and Farm Home Improvement". Landscaping advice was requested for some 38 schools, churches and public buildings. In this connection 11 landscape plans were completed and blue-printed for public buildings and recreation grounds. In addition, visits were made to some 132 rural homes in an effort to help plan landscape improvements and to give advice on horticultural problems.

## POULTRY DIVISION

Lectures and demonstrations in poultry and farm meats were given to students in agriculture.

The school poultry flock had a good year in egg production, with an extremely good demand for hatching eggs. The breeds represented in the school flock consist of Barred Plymouth Rocks, White Leghorns, Columbian Rocks and Cornish. The last couple of years approximately 200 turkeys, which are raised for Christmas market, have been purchased. Students receive practical training in dressing, eviscerating and packaging of poultry.

Extension work carried on during the past year consisted mainly of Poultry Days at short courses, Poultry Club Achievement Days and visits to farms to aid in problems relating to poultry. This division also culled, banded and blood-tested approximately 1,500 turkeys last fall under the Ontario Poultry Approval Policy.

The poultry division has received excellent co-operation from the Regional Veterinary Laboratory with respect to disease problems.

## *Western Ontario Agricultural School and Experimental Farm*

The programme of the Western Ontario Agricultural School and Experimental Farm continues along the same lines as in former years; teaching in the School in the winter, experimental work and general extension work throughout the year.

The Regional Veterinary Laboratory, under the Ontario Veterinary College, is located in the School. The staff of this Organization do the teaching of Bacteriology and Health of Animal studies.

The Extension Branch of the Ontario Department of Agriculture looks after drainage work in South Western Ontario as well as other mechanical work and teaches Agricultural Mechanics during the winter months.

They have also been assisted to a great extent by members of the Federal Department of Agriculture who are working in South Western Ontario, particularly the Experimental Station at Harrow, the Plant Pathology Laboratory at Harrow and the Entomology Laboratory at Chatham.

The Agricultural School has continued to develop during the year when total enrollment reached one hundred and thirty. It has therefore been necessary to increase the teaching staff during the year. Mr. W. W. Snow, who is in charge of crop work, was granted leave of absence to take up graduate work at the Ontario Agricultural College. During his absence Mr. Allan Campbell took over some of his work. Mr. Archie McLaren, who assisted last year, again instructed in Botany as well as crop work. Mr. Richard Frank, a Graduate of Leeds University, England, who had previous experience in Colonial work in Africa, was added to the staff and has been assisting in the Horticultural work as well as general Biology.

### Outstanding Events of the Year

One of the chief events of the year was the completion of the new wing of the dormitories. Last year it was necessary to use one of the houses for the overflow of students. This year the new addition made it possible to have all the students in the dormitories.

A section of the farm was laid out for experimental work in crop production. This area was brought into use during the year and most of the Field Husbandry and Soil Experiments were carried on in this area.

Lecture of Dr. H. H. Hannam brought in many outside people. This is one of a series of annual lectures sponsored by the Thamesville District Co-Operative.

The Junior Farmer Leadership Training School for South Western Ontario was held at this School during January.

The Leadership Training Course for the Recreation Organizations for South Western Ontario was held in June and was in charge of the different Recreational Organizations for South Western Ontario.

P. S. Troubadore, the Grand Champion Steer at the Chicago International Fair, brought a lot of livestock men to the School when he visited it in February.

The Nineteenth Annual Farmers' Week was held during January. Prominent Agricultural men from Ontario furnished most of the programme. In addition, Professor D. Sisson and Professor D. Wiersma from Perdu University were present on Soils and Irrigation Day. The attendance at this event continues to be good, with representatives from all of the Counties in Western Ontario.

The two days' programme devoted to Herbicide work was conducted with the co-operation of the Kent County Crop and Soil Improvement and the Crops Department of the Ontario Department of Agriculture.

A sheep shearing and wool preparation School was held during the winter, the Canadian Department of Agriculture and the Canadian Wool Growers' Association, as well as Dr. Campbell of the Ontario Veterinary College, assisting in this.

The South Western Ontario Veterinary Association Clinic was held at the School during the year.

The Russian Agricultural Delegation, which visited South Western Ontario in October, called at the School. They were interested chiefly in Hybrid Corn Production.

The Sixth Annual Parents' Night for the Junior Year was again held on the last day of school.

## EXTENSION

The Extension Service has been carried on as in former years. It comprises work with individual farmers as well as Agricultural Organizations. Assistance is also given to the problems of individuals.

The following services are maintained: Health problems in livestock and poultry under the Veterinary Laboratory. This consists of visits to the Laboratory as well as many visits to farms where problems arise.

Soil testing is carried on throughout the year. Over two hundred and fifty farmers brought samples to the Soils Laboratory as well as a systematic programme of soil testing with the students of the School. Livestock and poultry nutrition, management and housing problems are discussed and many times trips are made to the farms if necessary.

Diseases of crops, insect infestation and other problems affecting crops and gardens are continually before the staff and many of these are handled during the year.

The seed-cleaning plant continues to give service to the farmers of the district. There are more calls for seed treatment for disease each year.

The farm continues to supply seed for some of the leading crops, particularly for newer varieties. Along with this service, foundation seed for the white bean crop is supplied to the Bean Marketing Board.

## AGRICULTURAL SCHOOL

The Agricultural School attendance was up during the year. Most of the students came from the following counties — Essex, Kent, Elgin, Middlesex, Lambton and Huron. While requirements for admission remain the same as in former years, there is a tendency for the academic standing to increase. There are still a few that have no high school training and about fifty percent of these do very well.



The Agricultural Organizations of the district, as well as the citizens generally, continue to support the School, with prizes, scholarships or trophies.

The addition of the extra wing of the dormitory was finished in time to be partially in use during the year. An additional recreation room was set up in the basement which has been a great help to the dormitory staff who, with student organizations, carry on extra activities.

In addition to classroom work, excursions are made to some of the leading farms of the district as well as manufacturing and processing plants.

The Graduating Class this year numbers sixty, which is the largest class since starting the School.

### ANIMAL HUSBANDRY DEPARTMENT

Livestock is playing an even greater role in the overall programme of the school. It is imperative that sufficient livestock be maintained in a cash cropping area to keep up soil fertility. A research programme must be kept in operation in order to make the fullest use of the bi-products from these cash crops. Finally, livestock is essential for class-room instruction and to supply food for the School.

At the present time approximately one hundred head of cattle are maintained. These comprise the following breeds.

1. Shorthorn, a herd which was established many years ago, consisting approximately of fifty head of cows, heifers, calves and steers.
2. Hereford, a nucleus herd of eleven established in 1956, consisting of cows, heifers, calves and steer.
3. Holsteins, a herd established in 1951 when the School commenced operation, consisting of sixteen head of cows, heifers and calves.
4. Guernsey, established under similar conditions as the Holsteins, consisting of fifteen head of cows, heifers and calves.

These above breeds of cattle are all purebred, accredited, blood tested and a credit to their respective breeds.

### Beef Cattle

The 1956 calf crop was 100%. Calves were weaned when brought off grass in November at 500 lbs. average. Steers weighed 506 lbs., heifers weighed 494 lbs.

Since there is considerable interest in the feeding of diethylstilbestrol to steers and since this material has proven itself as a finishing programme, a trial is still under way whereby stilbestrol is being fed to steers weighing approximately 700 lbs. and receiving a wintering ration. The purpose of the trial is to determine whether there is sufficient increase in the weight and gain to offset the cost of the material. These steers will be placed on pasture for the summer and finished next fall.

Further experimental work has been conducted with respect to beet tops, an important cash crop bi-product. Beet top silage was substituted for both corn silage and grass silage in a trial feeding programme for both beef steers and heifers and gave equally as good results until about the first of March. After that date the beet top silage did not appear to be quite as palatable and the steers did not show quite the gain of the check lot steers.

White bean straw is still being substituted for hay in the wintering ration for beef cows. Again, this bi-product shows equally as good as hay, particularly for the early part of the winter.

Grass silage is still being used in the feeding programme. First and third cuttings were both ensiled. This material has been stored in a pit with good results. When properly packed, there is very little more spoilage than is found in an upright silo. From the trials at the Western Ontario Agricultural School in connection with grass silage, the following observations may be made.

1. "Grass Silage" to be palatable must be stored while the material is still in the grass stage; for this area during the first week of June.
2. There should be a balance between grain and legume.
3. The material must be well packed.
4. Preservatives, such as Sodium Metabisulphite or even oats, corn or barley, may contribute to palatability of the material but not sufficiently to justify their use.

A roughage programme is still being followed with the breeding herd, namely, pasture in summer, silage, hay and bean straw during the wintering season.

It is felt that, if the following can be achieved, the beef cattle enterprise is an ideal complement to the cash cropping programme.

1. Above a 90% calf crop.
2. Wean calves off grass at 500 lbs. or better.
3. Rely strictly upon forages and bi-products for feed.
4. Develop strains of cattle which are moderately large and will nurse their calves well.

### Dairy Cattle

Since grain corn is becoming a common crop in so much of Ontario, much interest has been exhibited in the Concentrate Dairy Ration instituted in 1952.

This ration consisted of the following:

Corn and cob meal .....	7 lbs.
Oats .....	3 lbs.
Soya Beans (cull) .....	1 lb.

This ration, which has met with excellent success since its inception this winter, has been altered somewhat, as follows:

Corn and cob meal .....	7 lbs.
Oats .....	3 lbs.
Wheat (unmarketable) .....	2 lbs.
Soya Beans (if available) .....	1 lb.

This ration to date has proven to be very succesful and has shown no ill effects.

Since there has been considerable controversy as to the most desirable way to store dry hay, a trial of cut (foraged) hay vs baled hay was instituted in 1956. Part of each of three fields was stored as cut hay and the other part as baled hay. During the wintering period the dairy cows were given a free choice of the hay in either state and for the most part showed a considerable preference for the baled hay. It would appear from this short trial that baled hay might be more palatable,

but whether this apparent increase in the palatability of the baled hay is sufficient to warrant the extra effort in its handling is difficult to determine at the present time.

The loafing barn, milking parlour set-up is still in use and is meeting with as much success as in previous years. The R.O.P. summary for the last lactation period for the cows in the herd is as follows:

<i>Holstein-Friesian</i>				
Milk	13,840 lbs.	B.F.	505 lbs.	
<i>Guernseys</i>				
Milk	10,406 lbs.	B.F.	542 lbs.	

NOTE: Above summary represents the whole herd — from 1st calf, 2 yr. old heifers and up. It is, also, significant that these cattle received no special care and all feed consumed was grown on the Experimental Farm.

### Sheep

The sheep flock is maintained primarily for classroom instruction as well as for pasturing among windbreaks and smaller sections of the farm inaccessible to cattle. This is the second year the Western Ontario Agricultural School has sponsored a sheep shearing and wool preparation school. The response is gratifying. Again, the School is indebted to Mr. F. A. Stewart of the Canadian Department of Agriculture and Mr. I. Remington of the Canadian Co-Operative Wool Growers' Association and Dr. D. Campbell of the Ontario Veterinary College for their assistance.

### Swine

Two selected strains of Yorkshire hogs are being maintained and selected. Completion of a Danish Style feeder barn with eight pens suitable for individual group or litter feeding now makes it possible to carry out, on a modest scale, some feed consumption and rate of gain studies in addition to a breeding programme. The new barn was built by Public Works, but the metal gates and pen structure were built in the Western Ontario Agricultural School shop and assembled and welded on the spot by the staff.

Temperature readings were taken during the winter months in three places — the new building, insulated in the walls and with a tight mow floor, in the original feeder barn, and outdoors. The new building ventilated exceptionally well providing the drop-top sloping windows were regulated to maintain circulation. Only twice when below zero temperatures necessitated complete closure did the walls and ceiling form moisture.

### Average Temperature Variation

Outside 0° to 30°, older barn 10° to 38°, new barn 28° to 50°.

In addition to testing two Purebred Yorkshire strains, several cross-bred litters were fed off during the year. The litters were crosses of a Berkshire boar on the farm's selected Canadian Yorkshire and English Large White sows. All were self-fed from weaning to market. One of the carcasses was placed on display at the Kent County Bacon Hog Show, as a demonstration of sound cross-breeding, using two pure selected breeds and marketing *all* progeny.

### Cross-bred results

Average weaning wt. (56 days) .....	30.1 lbs.
Average 80 day wt. ....	61 lbs.
Average to market (165 days) .....	204 lbs.



*Best to-date*

Market 145 days — 204 lbs.-153 lb. carcass A grade  
 Average to date — 60% A grade 40% B, — no lower grades  
 Feed — to-date 2.97 lb. feed per lb. live wt. gain

There now are selected groups of Canadian Yorkshire, English Large White, and Berkshire-Yorkshire Cross market hogs on self feed using A.R. ration, 70% corn-concentrate mixed and free choice shelled whole corn and concentrate. Through previous tests, it is known that similar bred hogs would produce "A" grade if hand fed on an oats, barley, corn concentrate ration.

## POULTRY DEPARTMENT

The following is a brief description of the experiments and activities associated with poultry.

**Turkeys**

On May 22, 1956, the first turkey poults entered the new experimental pole shelter. One hundred and fifty poults were donated by Turgen's Turkey Farm, Harrow, and Mero Turkey Farm, Maidstone, Ontario. This shelter has several new and interesting features; for instance, the brooder, 24' x 30', is of solid wall construction, no windows, so that lighting can be controlled to determine its effect on growth rate, mortality, etc., besides the advantage of low cost construction. Eight fresh air intakes against the ceiling and full length of the north side with a 16" exhaust fan in the centre of the south wall, provide adequate and controlled ventilation. The housing built over the fan allows air to be taken off the ceiling or by closing the hinged door, forcing the air to be drawn from the floor, whichever is desired. A 25-gallon medicating tank was installed in the fresh water line, allowing fresh water or medicated water in the brooder or growing pens or fresh water in one and medicated in the other.

There are four growing pens 30' x 12' under the same roof as the brooder. Whole cobs about six inches deep were used very satisfactorily as litter. Two automatic watering cups and four hanging feeders were placed in each pen to accommodate the 70 poults per pen.

The poults this season will be brooded on wire. Twenty-four sections, 5½' x 4', were constructed to cover the brooding area and yet allow relatively easy cleaning by removing the floor sections. The wire floor was necessary to combat blackhead disease, which has caused considerable concern in the early stages of growth.

**Chickens**

Beginning in January and up to June 24, 1956, six different breeds were started to be housed in the fall. The breeds are Rhode Island Reds, Rhode Island Red crossed with White Leghorn, White Leghorn, DeKalb 101, HyLine 934A and White Rocks. These various breeds were housed in separate pens and accurate records are being kept on mortality, production and feed consumption. The eggs from each breed, for a period of three days each month, are held under typical conditions for one week and each egg is carefully analyzed for quality. This involves weighing each egg in grams, converting this to ounces per dozen. The egg is then broken out on a plate glass and albumen height is measured in millimeters and any blood or meat spots are recorded. The shell thickness of each egg is measured in thousands of an inch.

## HORTICULTURE

During the month of May rain fell on fifteen separate days with a total precipitation of 5.15 inches. From the beginning of June until the twenty-sixth, rain occurred on eleven days, with a total fall of 4.14 inches.

This unusually prolonged wet weather had a very adverse effect on tree fruits. Practically no fruit set on the sweet cherries and the sour cherries and peaches produced but fair to medium crops. Apple scab could be only partially controlled and the set of fruit, despite ample blossoms, was poor. For the first time this Experimental Farm had no No. 1 apples to sell to the public.

Naturally, this excessive rainfall, followed by very dry weather in summer, had an effect on vegetables production. Early, quick growing, cool weather vegetables, such as, lettuce, spinach, cabbage and cauliflower thrived but the longer growing, heat loving plants, such as tomatoes, peppers, sweet corn and melons, suffered. Not one well flavoured melon was produced here.

There are many good varieties of sweet corn on the market. From limited trials, the following are recommended as being of excellent quality: Douglas Extra Early (60 days), Seneca Dawn (66 days), Cornelis Golden Rush (72 days), Lee (78 days), Golden Bantam (79 days), Seneca Chief (84 days) and Oakland (87 days).

Butternut Squash, Straight Eight Cucumbers, Vinedale Sweet Pepper, Hungarian Black Seeded Watermelon and Great Lakes Head Lettuce are recommended to all vegetable growers.

An extensive list of annual flowers for various uses has been prepared and published in the circular, "W.O.A.S. Recommends for 1957".

As in other years, this department has taken an active part in extension work involving diseases and insects both in horticultural and field crops. Experience in the production of greenhouse flowers and tomatoes has been of considerable value in solving growers' problems.

The beautifying of home grounds in town and country is increasingly popular. Each year new specimens are planted in order that the public may see and evaluate them in relation to their own needs.

## HERBICIDES

Screening experiments with newer herbicides and further tests with those of longer standing were continued. A brief summary of the more outstanding trials and results follows in this report.

Three soil sterilants, not hitherto tested here, that gave good results were two granular products Ureabor and DB Granular and one liquid product Baron. The first two were applied by hand along a very weedy railway spur in the middle of May and eradicated some sixteen broad leaved weeds and two grasses, couch and timothy. Baron, used as a spray, did an excellent job along a fence row in muck-land where the principal weeds were fescues, couch grass, Reed's canary grass and Canada thistle.

In field and sweet corn Radox (CDAA) showed promise against annual grasses such as foxtail and crabgrass when applied as a pre-emergence spray.

On half-acre plots of soybeans, as pre-emergence sprays, Radox (CDAA), CDEC and Premerge were applied two days after seeding. The area sprayed is infested annually with crabgrass, red-root pigweed and lamb's quarters. Radox

gave excellent control of the crabgrass but not the two broad leaved weeds. Premerge controlled these latter two but not the crabgrass. CDEC was ineffective as an herbicide in this trial.

The herbicides Natrin Crag No. 1 and Alanap-3 were applied in May to freshly weeded areas in a vineyard, in a nursery stock area and under climbing roses. Natrin prevented weed emergence for twelve days and Crag No. 1 and Alanap-3 for 25 days.

Perennial flower borders require considerable hand labour to keep them free from weeds. Natrin and Crag Herbicide No. 1 were sprayed on separate areas of a very mixed perennial border, freshly weeded, in May. No injury was apparent on any of the numerous flower species and Natrin prevented weed emergence for 12 days and Crag Herbicide No. 1 for 25 days.

With the idea that weed control in annual flower beds could be simplified with herbicides, three herbicides, Crag Herbicide No. 1, 3Y9 and Natrin were applied to twenty-one annuals grown in flats or bands and allowed to become well established in the field before spraying. The experiment was in duplicate. All the annuals proved tolerant to the herbicides applied and in 1957 the trials will be continued to ascertain the extent of weed control possible with them.

Alanap-3 was tested for weed control in established asparagus beds but the results were not as satisfactory as those from CMU in previous years. Probably Alanap-3 would be safer to use when asparagus seedlings are being grown.

The hand weeding of red beets for canning is an expensive operation and an efficient herbicide is greatly to be desired. Both on muck and mineral soils Randox, Chloro IPC, Niagara 5521, Neburon and DCU73 were tested but with inconclusive results.

Experiments for weed control in onions were continued. 3Y9 showed the greatest promise for pre-emergence weed control and Chloro IPC for post-emergence.

Poison ivy is an Ontario-wide pest. Several herbicides will with repeated applications eradicate it. Results of spraying with these chemicals have been, in many cases, contradictory. Two very promising herbicides are now available against this pest. These are Kuron (Silvex) and Amino Triazole. To evaluate their efficiency throughout all of Ontario under shady and sunny conditions and to find out at what stage of growth they should be applied, a series of co-operative experiments with Ontario Hydro Commission, the Department of Agriculture at Ottawa and this Experimental Farm were undertaken.

### Veterinary Diagnostic Laboratory

This laboratory was established with the Western Ontario Agricultural School in 1952 by the Ontario Veterinary College. Its work comprises diagnostic and consultation service to the veterinarians and farmers of South Western Ontario. The following is a summary of the work accomplished during the past year.

### POST MORTEM EXAMINATIONS

One thousand, one hundred and twenty-nine (1129) animals and poultry were submitted to the laboratory for post mortem examination. This number included:



## REPORT OF THE MINISTER OF AGRICULTURE

<i>Poultry</i>	Chickens .....	620	
	Turkeys .....	325	
	Ducks .....	10	
	Geese .....	1	
	Pheasants .....	5	
	Budgerigar .....	1	
	Game Birds .....	2	
		<u>964</u>	964
<i>Cattle</i>	Adults .....	10	
	Calves .....	5	
	Aborted Fetus .....	2	
		<u>17</u>	17

(Post Mortem examinations of the adults, in all cases, were made at the farm of the owner.)

Pigs		120	120
Sheep	Adults .....	6	
	Lambs .....	4	
		<u>10</u>	10
<i>Rodents</i>	Chinchilla .....	3	
	Mink .....	1	
	Rat .....	1	
		<u>5</u>	5

## LIVE EXAMINATIONS ONLY

Pigs .....	6	
Cats .....	2	
Dogs .....	2	
Sheep .....	2	
Calves .....	1	
	<u>13</u>	13
		<u>1129</u>

## Mastitis Diagnostic Service

The total number of milk samples tested at this laboratory in the fiscal year numbered 25,727. Of this number, 70% were submitted by Practicing Veterinarians, the Kent Country Health Unit, and Commercial Dairies; 15% were submitted by the farmers; and the remaining 15% were collected by the personnel of the laboratory. The following table (#1) shows the number of samples received each month.

TABLE #1

	<i>Month</i>	<i>Number of Samples</i>
1956	April .....	2,767
	May .....	3,476
	June .....	1,634
	July .....	1,376
	August .....	2,075
	September .....	1,016
	October .....	1,276
	November .....	1,464
	December .....	2,402
1957	January .....	2,577
	February .....	2,045
	March .....	3,619
		<u>25,727</u>

The above table (#1) shows an approximate 18% increase in samples examined for Mastitis organisms during the fiscal year 1955-56.

Table (#2) will give some indication of the percentages received from various sources. It will be noted that at the beginning of this diagnostic service, (1952), the laboratory personnel were responsible for the collection of all mastitis samples. In the last fiscal year, a great increase is noted by the number of samples submitted by the dairy farmers themselves. This increase is gratifying in that it shows the growing consciousness of the dairy farmer to the value of a regular mastitis testing program.

TABLE #2

Fiscal Year	Number of Samples	Approximate percentages collected by Practicing Veterinarians		
		Health Unit, etc.	Farmers	Laboratory Personnel
1952	107	----	----	100%
1953	5,200	20%	5%	75%
1954	10,940	25%	5%	70%
1955	21,814	63%	7%	30%
1956	25,727	70%	15%	15%

## SOILS

Soil testing is showing increased interest on the part of the farmer and students alike. Testing facilities and equipment are being kept in line with tests being used by most modern laboratories. Laboratory assistance primarily is the pressing problem, in answering expanding demand. As in past years and with added equipment to handle more samples, second year students received training in soil analysis and fertility recommendations.

Some 60 students completed approximately 600 soil tests of their own farms, and worked out recommendations for this coming cropping season.

Two-hundred and fifty farmers brought in soil samples and tests were completed on 900 samples.

In addition, the soils staff took over 250 samples from experimental plots and problem areas, and completed tests on these samples.

Total Soils Tests ..... 1750

## Soils Projects

This past season of 1956 saw the establishment of a separate Experimental Field, a portion of which has been devoted to Soils Plots.

Three Crop Rotation Demonstration Research Plots were established — one six-year livestock system and two three-year Cash Crop Rotation Systems. Yields from these were taken without fertility treatment, to establish a natural soil productivity level for the area prior to establishing fertilization practices. A series of continuous corn plots was also established, using four fertility levels, with fertilizer, three forms of balanced manure, and a check with no fertilization.

### 1956 — 1st Year Continuous Corn

	Yield
Check — no fertilization .....	78.0 bu/acre
Manure — sufficient to approximate 300 lb/acre 10-5-10 .....	98.0 bu/acre
Fertilizer only — 300 lb/acre 10-10-10 .....	98.0 bu/acre
Manure plus fertilizer elements to approximate 300 lb/acre 10-10-10 .....	90.0 bu/acre

Average of four reports showed no significant difference in yield through use of cattle, hog or poultry manure, all used in quantity to approximate 300 lb. per acre 10-10-10.

### Nitrogen Applications of Various Forms (3rd Year)

Applications of Ammonium Nitrate, Anhydrous Ammonia and Aqua Ammonia @ 40 lbs. actual Nitrogen/acre for the third consecutive year gave no significant difference in yield — all other treatments being equal — yield on all plots averaged 98 bu/acre.

### Fertilizer Increment — Individual Element Test

Applications of individual elements were made from 0 to A calculated optimum on plots of White Beans and Soybeans established on loam soil typical of land being used for their production. Fertilizer was applied immediately prior to planting.

Fertilization — Nitrogen — Ammonium Nitrate .....	0 and 40 lb/acre
Phosphorous Super-phos .....	0 up to 480 lb/acre
Potash — Muriate of Potash .....	— up to 200 lb/acre

### Fertilizer Increment on White Beans and Soybeans

<i>Results</i>	<i>Test Plot Yield</i>	<i>Check — o</i>
White Beans	35.0 bu/acre	34.1 bu/acre
Soybeans	32.5 bu/acre	30.1 bu/acre

Analysis of individual element plots showed no significant increase over no fertilization, possibly indicating no yield increase from direct fertilization. The objective is now to evaluate elements applied prior to planting.

### FIELD CROPS

The cropping system of the farm was carried on about the same as usual. Practically all the crops grown in the district were produced on the farm.

There are two areas on the farm, one devoted to the regular cropping system, the other used more as an experimental area. Besides this particular area, numerous tests are conducted with the different crops throughout the counties in South Western Ontario.

Corn yields were quite high in 1956. On 40 acres, approximately 4200 bushels of grain corn were obtained. As well, about 15 acres more were used for silage purposes.

Yields of oats were only slightly over 65 bushels per acre of all varieties. 47 acres were grown, mostly of Rodney variety.

Michelite Field Beans were produced on 16 acres. The new variety, Sanilac, was grown on about 2 acres to produce a nucleus of seed for Bean growers. A total of 260 bushels of seed was grown of the two varieties.

Of soybeans, Harosoy and Chippewa were used. Yield was approximately 32 bushels per acre.

Two acres of Burley Tobacco was grown. Although there were nearly 20 varieties in the crop sold, grade was quite satisfactory.

The hay crop was above average in production, with enough for a carry-over for 1957. Three cuttings were taken on most fields. Some grass silage was made with surplus production in the spring.



The 1956 Winter Wheat and Winter Barley crops suffered more winter killing than at any time in many years. The yield trials of both crops were lost for that reason and yields on the Experimental Farm were reduced considerably.

No fields, however, had to be abandoned because of winter killing. On 63 acres of winter wheat, 2375 bus. of seed was obtained. Because of the severe conditions, the Winter Barley yield was less per acre than wheat, yielding 130 bushels on 3½ acres. A small field of Winter Oats ran about 25 bushels per acre.

Seed of the following varieties was produced for sale: Genesee, Richmond and Dawbul Wheat, and Hudson, Kenate, Wong and Tennessee Barley.

The following tables will give the results of the experimental work conducted on the School farm.

#### W.O.A.S. OAT VARIETY TEST 1956

<i>Variety</i>	<i>Yield in Bus./Acre</i>	<i>Days to Heading</i>	<i>Days to Maturity</i>	<i>Length of straw</i>	<i>Wt./Bus.</i>
Rodney .....	108.2	79.0	106.7	46.3	36.0
Garry .....	100.8	76.6	105.3	43.0	34.0
Fortune .....	100.7	77.5	105.5	47.5	31.0
Beaver .....	99.4	76.0	104.5	48.6	34.0
Simcoe .....	99.0	76.5	104.5	48.1	33.0
Sauk .....	97.7	75.5	105.7	43.0	33.0
Clintland .....	93.4	73.8	104.0	42.6	35.0
Ajax .....	92.9	76.1	104.0	47.1	33.0
Clintofe .....	92.0	75.1	104.0	42.5	36.0
Craig .....	89.1	76.1	104.0	38.8	32.0
Clinton 59 .....	88.9	75.0	104.2	41.1	35.0
Lanark .....	87.5	74.6	104.5	47.1	36.0

#### HYBRID CORN

Extensive tests were made of Hybrid Corn varieties during 1956. Besides the regular test at the Western Ontario Agricultural School, another test was held in Elgin County. The following Firms entered numerous varieties in these tests, Pioneer, Super Krost, DeKalb, Warwick, Jacques, Pfister, Funks, Pride, United Hagie.

Besides these tests, County Demonstration Tests were conducted in all the South Western Ontario Counties. There is still considerable variation in yield maturity and other important factors in corn.

In all, thirty-six varieties were tested in the license test at Ridgetown. This test is for the purpose of testing out the varieties that will be licensed for the coming year. In the demonstration plots, only some of the more common varieties were used.

#### W.O.A.S. SOYBEAN VARIETY TEST — EARLY SECTION 1956

Planted June 1/56

Harvested: Oct. 17/56

<i>Variety</i>	<i>Height in inches</i>	<i>Height of Podding</i>	<i>Lodging 1-9</i>	<i>Moisture % at Harvest</i>	<i>Yield Bus./Acre at 14% Moisture</i>
1. Hardome	33	Medium	4.0	10.8	37.6
2. Goldsoy	24	Medium	2.5	10.7	36.7

3. Grant	27	Med.-low	2.5	10.4	36.4
4. Ronville	25	Medium	1.0	10.5	35.1
5. Chippewa	29	High	2.0	10.5	34.3
6. Capital	29	Med.-low	2.5	10.7	34.2
7. Mandarin	25	Low	2.5	10.5	34.1
8. Comet	27	Medium	1.0	10.9	34.1
9. Norchief	25	Low	3.0	10.9	33.1
10. Acme	24	Medium	2.0	10.7	25.4

## W.O.A.S. SOYBEAN VARIETY TEST — LATE SECTION 1956

Planted June 1/56

Harvested Oct. 18/56

<i>Variety</i>	<i>Height in inches</i>	<i>Height of Podding</i>	<i>Lodging 1-9</i>	<i>Moisture % at Harvest</i>	<i>Yield Bus./Acre at 14% Moisture</i>
1. Harosoy	38	Medium	1.0	12.0	36.3
2. Hardome	34	Medium	4.0	11.6	36.0
3. Chippewa	31	Med.-high	1.0	12.6	34.0
4. Monroe	43	Medium	3.0	12.6	33.8
5. Blackhawk	34	Low	1.5	12.5	32.2
6. Earlyana	37	High	4.0	12.6	27.5
7. Hawkeye	36	High	2.0	12.6	27.0
8. Lincoln	39	High	2.5	12.8	25.4
9. Harman	30	High	3.0	12.2	25.2

## W.O.A.S. FIELD BEAN VARIETY TEST 1956

<i>Variety</i>	<i>Yield in Bus./Acre</i>
Corvette .....	33.1
Clipper .....	33.0
4413-52-9 .....	31.0
Blue Pod .....	30.6
4692-21A .....	29.8
Michelite .....	29.2
Robust .....	29.1
Sanilac .....	29.0
4413-39 .....	28.4
4411-26 .....	27.8
4411-85A .....	23.0
L.S.D. at 5% Level—2.7 Bus./acre	

## AGRICULTURAL MECHANICS

Fieldmen from the Extension Department of the Ontario Department of Agriculture look after the instruction work in Agricultural Mechanics during the School term. The staff situated at Ridgetown has charge of Agricultural Engineering Extension in Essex, Kent, Elgin and Lambton.

The greatest demand is the making of drainage surveys. It has been difficult to keep up with the demand for the past few years but with extra help during the past year, greater progress has been made.

Besides this work, some pond surveys were made as well as providing information on farm buildings; chiefly remodelling and ventilation.

## *Demonstration Farm — New Liskeard*

### Foreword

The Demonstration Farm is located in the "Little Clay Belt" of Northern Ontario. It is situated just north of the town of New Liskeard, which has a population of about 4,000. The farm, located in the Temiskaming District on the southern fringe of the Clay Belt, gives some indication of what the visitor may expect of the farm land in general in the Clay Belt area. The soil on the farm is representative of a large part of the soil occurring in the immediate area and in Northern Ontario. The farm consists of 320 acres of heavy clay soil with highway #11 dividing it in half. The topography is flat and, for the most part, the drainage is the limiting factor in production of crops. Poor drainage is more evident on the east farm than on the west. On the western boundary, the topography is more rolling as one nears the Wabi River. This tract of land is rough pasture; a portion of it is reforested with a stand of Jack Pine. The farm strives to give leadership in animal and crop production and, for the most part, all enterprises are conducted on as practical a basis as possible. During the past two years some experimental work with grain and forage varieties has been conducted by the staffs of the Field Husbandry and Soils Departments of the Ontario Agricultural College, Guelph.

Of the sixteen fields on the farm, three are seeded to a permanent type pasture for the beef herd. On the remaining fields, a five-year rotation of two years grain, two years hay and one year pasture is being followed as closely as seasonal conditions permit. Soil samples are taken from the ploughed fields in the fall and fertilizer is applied with the grain according to recommendations made by the Soil Testing Laboratory in Guelph. In most years, a fall application of 150 lbs. of 20% superphosphate is applied to new seedings with the older meadows getting an application of 100 lbs. of 10-10-10 fertilizer per acre in the spring of the year. Hay meadows have been top dressed in the fall with a regular application of barnyard manure. Lately, however, considerable manure is being used on the corn acreage and also ploughed in during the fall in preparation for spring seeding of grain. It is felt that this practise, along with ploughing down legume aftermath, will tend to maintain the physical structure of the soil and keep the organic matter content at a more satisfactory level.

Registered seed is grown annually and is distributed to the farmers of the area through the Temiskaming Producers Co-operative. Registered Rodney and Commercial Cartier were the two varieties grown in 1956. Due to unfavourable weather conditions during the whole of the 1956 season and particularly at harvest time, the oats were suitable for feed only and a low grade at that. Commercial feed supplements were added to this low quality grain and fed to the dairy herd. No summer fallowing was possible during the past season. Not at any time was it possible to plough and cultivate in order to sow the usual twenty acres of Rideau winter wheat. The harvesting of a bumper crop of winter wheat was delayed six weeks by adverse conditions and then it was impossible to save it after combining due to high moisture content. The three acres of Tetra-Petkus Rye yielded from 90 to 100 bushels per acre but was of poor quality in the end because of the same difficult weather conditions.



The spring of 1956 was cold and backward with very little growing weather until June first. This, however, was not a problem on the farm because there was plenty of roughage left over. Spring seeding got underway the last few days in May, only to be halted until the 12th of June because of heavy rainfall. At no time during the growing season did the grain crop suffer from drought, with the result that excellent stands were evident by the middle of August. The lack of sunshine and heat was the limiting factor with the result that the grain had not ripened by the 1st of October. Frost hastened maturity at this time and, together with Indian summer weather during most of October, made it possible to combine forty acres of Rodney oats. The grain was light and the crop proved to be fit for low quality feed.

Hay yields were good. New seeding yielded two tons of hay per acre and a considerable amount of roughage was realized from areas that were intended for rotational pasture. With the exception of the roughage that was harvested during a ten-day period in late July and early August, hay quality was below average. This is evident at the present time as production and gains are below average, and more roughage is being consumed. In general, the weather was not suitable for making good quality hay. For most of the time during the growing season, pastures were excellent but did not contain sufficient substance to keep dairy cows up to normal production. Some dry hay feeding was necessary. Fall ploughing was completed in early November under rather difficult conditions. In spite of excess moisture, the ground seemed to be in a compacted condition and was difficult to turn over. Approximately 60 acres were ploughed using a 420 John Deere Crawler (which was purchased early in the fall) to do a satisfactory job.

As in 1955, a sale of purebred stock was not held. Some breeding stock was sold according to the demand that existed at various times during the year.

#### Junior Extension

The Demonstration Farm and its facilities make it convenient to carry out the Junior Extension programme in the area. Four Young Farmers from England visited the farm and saw for themselves the various summer operations in progress at that time.

The Junior Farmers of the district and 4-H Club members held their Achievement Day on the farm grounds. Their programmes are carried out conveniently and with ease, with the various classes of cattle being assembled at one point. Three groups of students from the Agricultural School, Ville Marie, Quebec, visited the farm to see operations taking place. The winter students made their visit in April with the summer school of girls making their tour in September. Public school students also visited the farm, as did many other groups. In October, the North-Eastern Ontario 4-H competitions were conducted at the farm and farm livestock was used.

#### Senior Extension

Many senior agricultural organizations are entertained annually. The farm staff were hosts for the Temiskaming Holstein Breeders Annual Twilight meeting. Many members of the Crop Improvement Association visited the farm to see the experimental plots, the tetra-petkus field of rye, and the tile drains and loose housing system for beef cattle. Several hundred visitors were conducted around the farm during 1956.

## Haymaking

The 1956 haymaking season was a long one. Actual haying operations got underway about the end of June and extended until the middle of August. Only ten days in this period were ideal for making good quality hay. The quantity was excellent but due to weather conditions the quality was considerably below average. Approximately 11,700 bales were stored from 120 acres. On the average, the yield was two tons to the acre. One first year hay field exceeded this yield by one half ton per acre. All older meadows except one received an application of one hundred pounds per acre of 10-10-10 fertilizer. The field which did not receive the usual application gave a yield of approximately three-quarters of a ton per acre compared to one and one-half tons to two tons per acre on those receiving the one hundred pound application. As in 1955, the pole barn was filled with baled hay. The field baler was used for the complete hay crop. The slatted floor hay-drier system was put into operation during the first part of the season but due to lack of space and a large crop of hay, the artificial drying of hay was carried out on a limited scale. Roughage will be adequate in spite of the large amount consumed this winter. Because of poor drying conditions, a considerable number of bales will be badly weathered. This is being put through the food cutting box and mixed with straw as bedding for livestock — an important consideration when straw is generally in short supply.

## Pasture Management

In the regular farm rotation, pasture occupies the fifth and final year. Rotational grazing is carried on with the herd being contained in a strip for a period of ten days. This area is then clipped and droppings are harrowed. Since this practice was initiated two years ago, the carrying capacity of the pasture land has been increased and at the same time a considerable amount of fodder has been recovered as hay.

Approximately sixty acres of pasture adjacent to the Wabi River has been seeded down to long term pasture mixture. This is treated in the same manner as the pasture area in the rotation, i.e. concerning rotational grazing, clipping and harrowing. A sixteen-acre field was seeded with the following long term pasture mixture in the spring of 1956:

- 8 lbs. alfalfa
- 4 lbs. red clover
- 1½ lbs. ladino
- 8 lbs. brome
- 4 lbs. timothy
- 4 lbs. orchard fescue
- 3 lbs. meadow fescue

One bushel of Cartier oats was sown with this mixture as a nurse crop. Wet weather prevented the pasturing of the nurse crop till after the grain had ripened. This field was to have received 150 lbs. of 20% superphosphate in the fall of 1956 but machinery could not be taken into the field because of excess moisture.

Seven acres of the permanent pasture land which had run out were ploughed last fall and will be re-established this spring.

More emphasis has been placed on pastures, with the result that more livestock are being carried on the same amount of pasture.

## Silage

The hybrid corn variety (Can. 210) was seeded on June 7 for silage purposes. Growth was fair at the beginning of the season but developed very poorly as the season progressed. At various times there were signs of yellowing due to excess moisture. One silo was approximately half-filled with silage corn and was completely fed out early in 1957. The year 1956 was a corn failure year as the crop was only about 25% of normal. Lack of heat and excess moisture were the contributing factors.

## Weed Control

Weeds are controlled in pastures by clipping periodically during the growing season. Spraying weeds in grain fields is done with an old horse drawn potato sprayer which has been adequately set up for weed spraying. This machine is rapidly becoming obsolete. Every year considerable repairs are necessary and the operation is much too slow. However, it continues to be of service on a limited scale. Very little spraying for control of sow thistle was done last year because of the lack of spraying weather. Roadsides and lawns are sprayed annually with a 2-4-D Ester to control weeds. Considerable roguing is carried on as time permits and where necessary. The control of twitch grass is a continuous process and much is accomplished when the weather is ideal for this operation.

## Drainage

The soil on the farm is poorly to very poorly drained, especially on the east farm. With the general topography being as flat as it is, proper drainage is a problem. A system of surface ditches is employed but in a wet year these are not entirely adequate. The tile drainage is working well after four years of operation. It is on this field that the forage and grain variety experimental plots are located.

## Experimental Plots

In 1955 the Field Husbandry Department, Ontario Agricultural College, established variety plots of oats and barley at the New Liskeard Demonstration Farm. At the same time forage plots were planted. This programme was continued in 1956 and along with those already mentioned, plots of winter wheat and rye were planted. The farm staff assist and co-operate with the Field Husbandry staff at Ontario Agricultural College by preparing the soil and keeping the plots clean.

### OAT TEST — NEW LISKEARD, 1955

<i>Oats in order of yield</i>	<i>Yield Bus./Acre</i>	<i>Weight per Bu.</i>	<i>Height Ins.</i>	<i>Days to Maturity</i>	<i>% Lodg- ing</i>	<i>% Hull</i>	<i>1,000 Kernel Weight</i>	<i>Stem Rust</i>
Rodney	71.2	39.0	32		26	25.6	38.6	0
Abegweit S1	68.1	38.5	32	All	20	25.8	37.6	8
Ajax	66.2	42.0	32	harvested	45	25.7	35.2	8
Simcoe	63.6	41.5	36	August 16	29	24.4	37.4	13
Craig	65.0	39.0	28	89 days	5	27.1	38.6	15
Garry	63.4	41.5	32	from	1	26.3	39.4	0
G.A. 49	63.4	39.5	30	seeding.	9	25.3	37.4	3
G.G. 52	62.3	39.0	28		19	23.2	38.1	5
G.A. 62	55.6	38.5	29		1	23.7	42.1	25



Beaver	54.6	40.5	32	10	23.9	37.8	8
Larain	51.5	40.5	31	35	23.6	37.7	40
G.A. 50	44.1	39.5	28	9	24.0	36.5	30
L.S.D. 5% level	5.5						

## BARLEY TEST — NEW LISKEARD, 1955

<i>Barley in order of Yield</i>	<i>Yield Bus./Acre</i>	<i>Weight per Bushel</i>	<i>Height Ins.</i>	<i>Days to Maturity</i>	<i>% Lodging</i>	<i>% Mildew</i>	<i>1,000 K Wt/gms</i>
Brant	50.6	50.5	24				37.2
Brandon 3833	44.5	51.5	24	Harvested	No	No	40.3
Galore	44.4	50.5	25	August 16	lodging	mildew	35.8
G.B. 59	44.2	50.0	27	89 days			37.4
G.B. 60	42.4	48.5	25	from			36.7
Montcalm	41.7	51.5	30	seeding.			37.5
G.B. 61	41.5	52.0	23				35.4
Fort	38.6	49.5	26				34.5
O.A.C. 21	38.5	49.5	24				34.6
Husky	31.7	49.5	27				35.7
L.S.D. — level 5%		6.4					

## OAT TEST — NEW LISKEARD, 1956

<i>Variety</i>	Random Sample					
	<i>Yield Bus./Acre</i>	<i>Weight per Bushel</i>	<i>% Hull</i>	<i>1,000 Kernel Weight</i>	<i>Height in Inches</i>	
Simcoe	88.3	37.0	26.7	30.2	50	
Kap. 3928-2-2 (Shield)	85.2	40.0	24.5	32.7	49	
Clintland	81.6	42.5	24.5	30.9	43	
Ajax	81.4	37.5	28.3	31.1	49	
Garry	76.6	37.0	29.8	31.8	49	
G.A. 62	76.6	40.0	24.3	39.5	45	
Beaver	75.9	37.5	25.9	34.8	49	
G.A. 52	75.4	37.5	24.2	34.2	43	
Cartier	75.3	40.5	25.3	35.8	49	
Larain	74.5	40.0	24.5	34.8	54	
Abegweit S1	73.8	34.5	28.6	33.0	48	
Rodney	71.4	34.0	30.6	30.2	48	
Cherokee	69.5	38.5	27.3	32.7	40	
Lanark	65.5	38.5	25.4	31.8	51	

## BARLEY TEST — NEW LISKEARD, 1956

<i>Variety</i>	<i>Yield in Bus./Acre</i>	<i>Weight per Bus./lbs.</i>	<i>Height in Inches</i>	<i>Lodging %</i>
G.B. 61	51.8	54.0	35	16
Parkland	51.5	52.0	42	15
Kap. 4061 - 8	49.8	52.0	38	18
G.B. 59	49.3	48.0	36	26
Montcalm	48.9	49.0	41	39
G.B. 60	48.8	48.5	39	36
O.A.C. 21	48.7	49.5	41	38
Brant	42.7	47.0	39	21
Galore	41.8	46.5	38	31
Fort	38.5	49.5	37	8
L.S.D. @ 5%	9.5 Bus./Acre			

## WINTER WHEAT AND RYE TEST, NEW LISKEARD, 1956

<i>Crop and Variety</i>	<i>Yield in Bus./Acre</i>	<i>Winter Survival %</i>
WINTER RYE		
Horton .....	33.5	51
Steele .....	32.9	48
Tetrapetkus .....	30.0	53
WINTER WHEAT		
Cornell 595 .....	46.9	46
Dawzon's Golden Chaff .....	46.6	48
Genesee .....	45.9	59
Dawbul .....	45.0	54
Rideau .....	43.3	44
G.C. 480 .....	40.9	50
G.C. 449 .....	40.5	54
G.C. 361 .....	39.7	66
G.C. 481 .....	36.9	36
L.S.D. @ 5% .....	4.7 Bus./Acre	

## Live Stock

Registered livestock on the Demonstration Farm consists of Holstein cattle, Yorkshire pigs, Suffolk sheep and one team of Percheron horses. In addition there is a commercial herd of Herefords and some Suffolk x Hampshire ewes. Surplus breeding stock is disposed of whenever the demand is present. Those going to market are sold through the Temiskaming Producers Co-operative. No auction sale of surplus stock was held in 1956.

## Holsteins

At the present time the Holstein herd consists of twenty milking females, fourteen heifers and three calves. The herd sire, ABC Sylvius Lad R, was disposed of in the fall of 1956. About half the herd are daughters of Inka Supreme Reflection with the remainder of the cows being daughters of ABC Sylvius Lad R — a double grandson of Inka Supreme Reflection. All Holsteins are being bred to sires from the Central Ontario Cattle Breeding Unit at Maple. Several promising bull calves have been sold to farmers in Quebec close to the Ontario border.

The dairy herd is on Record of Performance. Results are tabulated from daily weighings on twice-a-day milking. Sweet cream is sold for the manufacture of ice-cream and skim milk is fed to calves, swine and poultry.

## Herefords

The Hereford herd is a grade herd. From the fifteen cows purchased on Manitoulin Island in 1952 there are now 17 cows, 12 heifers, 4 steers, and 14 calves, according to inventory at the end of March, 1957. At calving time the cows are housed in the large barn. The herd over-winters in a pole type barn and in a shed, on roughage alone. With the exception of the calves (which were creep fed in a box stall) the whole herd was fed from a feed bunk and feed racks in the open. The herd is in a thrifty condition at the present time and consuming considerably more roughage in winter. Water, salt and minerals are provided

in the yard. In 1956 there was a 100% calf crop of nine females and eight males. Calves arriving since January 15th, 1957, were weighed two days after birth. Two steers were shipped in August and weighed 1,060 lbs. each at twenty months. Another was shipped in February and two yearlings are now being fitted for market.

### Swine

The piggery is filled to capacity at the present time. This building is easily kept clean with its cement floors and asbestos flat board on the interior walls and ceilings. There is a large storage space above which serves as storage for poultry feed, fertilizer, and bedding. There are five sows in the herd now — two being disposed of in March of 1957. There are two boars in the herd. O. A. C. Commander is replacing O. A. C. Admiral 481 k which will be disposed of in the near future. Farm hogs are fed farm grown grains as the supply exists. This is supplemented with hog concentrates together with buttermilk and skim milk. Market hogs are disposed of through the local co-operative and breeding stock is disposed of when the demand is present.

### Sheep

The sheep flocks consist of eleven pure bred Suffolk and about the same number of registered Hampshires. There are also about eleven Hampshire x Suffolk crossbred ewes. As the years go by, an endeavour is being made to change the entire sheep flock to a pure bred Suffolk flock. Lambing is in progress at the time of writing, with a good lamb crop arriving. The farm flock is dipped once a year and treated for internal parasites twice yearly. The wool is sold through the Co-operative Wool Growers in Toronto and market lambs are sold through the Co-operative en route to Toronto.

No breeding stock of the Suffolk breed has been offered for sale as the foundation flock is still a bit small. The district is well adapted for raising sheep and approximately six carloads of top quality lambs are shipped out following the Uno Park Lamb Fair and sale.

### Poultry

Four hundred Barred Plymouth Rock hens are kept in the laying pens and this number varies as culling is continually being carried on. All birds are incubated and raised on the farm. At present there are about 600 baby chicks in the brooder house and this number will reach 1,800 before the hatching season concludes. Young cockerels are offered for sale at various ages but the demand is slow and particularly so this year with good feed being scarce. The year old hens were marketed last August and pens refilled in September with pullets. Surplus pullets are offered for sale and serve as a nucleus for many small farm flocks.

### Breeding Stock Distributed from the Farm in 1956

	Male	Female
Holsteins .....	5	----
Swine .....	3	----
Poultry: Hens — 142; Roosters — 783; Pullets — 282; Baby Chicks — 50		



## Weather Report for 1956

	<i>Sunshine</i>	<i>Rainfall</i>	<i>Snowfall</i>	<i>Maximum Temp.</i>	<i>Minimum Temp.</i>
January .....	96.5	.02	5.7	17.9	—3.3
February .....	119.5	.....	13.37	25.7	1.3
March .....	188.3	.....	16.00	30.1	.2
April .....	154.0	.36	.60	42.8	23.0
May .....	144.0	2.91	3.25	57.3	31.6
June .....	168.2	4.20	.....	75.0	37.0
July .....	208.0	4.58	.....	73.5	50.6
August .....	201.0	4.21	.....	72.3	49.3
September .....	119.7	6.03	.....	60.1	39.7
October .....	156.2	1.16	.....	58.0	39.0
November .....	51.6	5.65	3.6	.....	22.4
December .....	51.2	.....	21.3	20.3	4.9
Totals ....	1,658.2	29.12	44.65		

## *Strathclair Demonstration Farm*

On June 12th, 1956, the Ontario Government entered into an agreement with Alexander Boyd Sinclair, the owner of Strathclair Farm at Sault Ste. Marie, under which the premises known as Strathclair Farm and comprising approximately 325 acres in the Township of Tarentorus in the District of Algoma, were transferred to the Ontario Government, to be operated by the Department of Agriculture in the interests of education and/or research. In addition to the land and buildings, the equipment at the Farm was also transferred to the Government.

### **Operations in 1956**

Under the direction of the Agricultural Representative for the District of Algoma, with the assistance of the farm foreman at Strathclair Farm, operations were carried on during 1956.

Ordinary cropping practices were carried out as well as possible, but due to an abnormally wet season, some difficulties were experienced in harvesting most crops. However, sufficient roughage and cereal grains were harvested to make it feasible to establish a herd of beef cattle at the Farm. In co-operation with the Live Stock Branch and the Animal Husbandry Department at the Ontario Agricultural College, a herd of purebred Herefords — 47 in all — were purchased from various farmers in Ontario, and a number also from a farmer in the Province of Saskatchewan.

### **Future Programme**

The Department of Agriculture in fulfilling its portion of the agreement to provide education and research at the Farm, is establishing a plan for beef cattle testing. The purpose of this programme is to:

- (1) Focus particular attention on feeding and growth studies of beef cattle;
- (2) Secure information on hereditary characteristics of various blood lines by comparing the various female families and by the use of different sires.

This programme will be carried on jointly by the Extension Branch, the Live Stock Branch and the Animal Husbandry Department at the Ontario Agricultural College, with particular responsibilities designated to each group.

Preliminary data is now being gathered for the carrying out of the project and the necessary herd sires have been purchased. It should be pointed out that in correlating this particular programme to those already being operated by the Department of Agriculture, it has been decided that only bulls which have been tested under the Advanced Registry Policy of the Department of Agriculture will be used.

It will take a considerable period of time to develop the necessary data to obtain authentic results in this particular programme, however; it is felt that through the years the information gained in this study will be very valuable to beef cattle producers in the Province and of particular value to those in Northern Ontario Districts where the number of commercial beef cattle being produced is being increased year by year.

### **Staff**

Mr. John Corbett was appointed Farm Foreman at Strathclair Farm on May 14th, 1956.





**BRANCHES OF THE  
ONTARIO DEPARTMENT  
OF AGRICULTURE**



## *Agricultural and Horticultural Societies Branch*

The administration of the Agricultural Societies Act, the Horticultural Societies Act and the Community Centres Act is the responsibility of this Branch. The office of the Director is also the headquarters for the Ontario Plowmen's Association, the Ontario Horticultural Association and the Ontario Association of Agricultural Societies. Leadership is given in planning Fairs and Agricultural Society activities, also Horticultural projects and Plowing Matches, including the International Plowing Match. Readers are advised to consult annual Reports of the above organizations for further details.

### FAIRS

Ontario has 259 Agricultural Societies. 248 of these held Fairs in 1956. While weather conditions were not too favourable, effective programmes were carried out and interest in Fairs as community projects was well maintained. The cost of operating Fairs is increasing and many boards are finding it difficult to keep out of the red. Ways and means by which revenues can be increased are receiving considerable attention. Many boards are anxious about the future and are looking around for ideas which will help them in their efforts to enlarge the usefulness of the Fair to the community it serves.

Twenty-three Societies claimed wet weather grants while many others suffered loss in attendance because of cold or favourable weather for harvesting.

Seven Fairs are classed as A and 33 as B by the Canada Department of Agriculture. By an amendment to the Agricultural Societies Act during the 1956 session of the Provincial Legislature, the Ontario Department of Agriculture has regulations to classify all Societies into A, B and C. Every Society will, in future, qualify for grant on capital expenditure on basis of 25%.

A new society was organized during the year at Timmins in Northern Ontario. It will be known as Porcupine District Agricultural Society.

Ninety Societies have passed their 100th birthday and eleven of these marked their centennial by erecting a pylon or gateway and by a special programme on Fair day. Those which qualified and received centennial grants of \$1,000.00 included Embro, Oakwood, Metcalfe, Bayfield, Aylmer, Shannonville, Campbellford, Beeton, Arthur, Puslinch and McDonalds Corners.

### 4H CLUBS

Fair boards co-operated with Agricultural Representatives, Home Economists and club leaders in support of 4H Club projects. Of the 671 clubs organized in 1956, 62.4% were sponsored by Agricultural Societies. In most instances achievement days were held at the Fairs.

### Social Functions

Over 60 Societies sponsored banquets or social functions and in nearly every instance guests included members of 4H Clubs and their leaders. Upsala Society



in Thunder Bay District held a number of suppers to raise money to finance cost of new hall and fair grounds.

### Regional Breed Shows

Societies sponsored 97 Regional Shows at which 7,311 cattle were shown, also 10 Championship Shows.

### Commercial Feature Displays

Grants were paid to Societies on 141 commercial feature projects. Among those listed were Bacon Hogs, Market Cattle, Market Lambs, Dairy Produce, Grain, Hay, Vegetables, Potatoes, Poultry, Eggs, Honey, Tobacco, Fruit, Turnips, Maple Syrup and Wool.

A number of Societies qualified for grant on two features. The maximum grant on each is \$200.00 and it is based on 50% of expenditures for prizes, display material, judging and advertising.

### Bacon Hog Special

The T. Eaton Company again offered \$50.00 in cash prizes to Societies for pens of 4 hogs owned and fed by the exhibitor for a period of 90 days immediately preceding the exhibition. Forty-seven Societies participated and 41 submitted grading reports. Ripley Fair had the highest entry with 32 pens.

### Canada Packers Special

Special prizes of domestic shortening and other products having a value of \$15.00 were offered to each Society by Canada Packers for pies and cakes. 232 Fairs took advantage of this generous offer. Midland had the highest entry in this special section — 46 pies and 34 cakes.

### Women's Organization Displays

This feature is gaining in popularity and has become an important section of the women's department. The majority of the displays were put on by Women's Institutes but in several instances it was noted competition was open also to church groups.

Fairs with largest competition were Belleville with 20 entries, Milton 18, Caledonia 17, Simcoe and Brampton 16 each.

Those having between 10 and 15 entries: Orangeville, Paris, Beamsville, Acton, Cobden, Owen Sound, Peterborough, Collingwood, Lindsay, Rockton, Listowel, Brigiden.

### Improvement

Considerable improvements were made to grounds and buildings during the year. New buildings were constructed by 17 Societies; 15 built new fences while

22 did considerable painting of buildings. Fourteen installed extra Hydro facilities and 56 made general improvements to grounds.

In addition to the above, 55 Societies reported having spent considerable funds on repairs and equipment.

### Field Crop Competitions

During the year, 259 Field Crop Competitions were held. These have been increasing as indicated by the following table:

	1952	1953	1954	1955	1956
Number of Competitions .....	212	243	252	258	259
Number of Competitors .....	2,903	3,361	3,549	3,536	3,818

### Seed and Sheaf Competition, C.N.E.

Winners were as follows:

Zone	Award	Grain and Seeds	Sheaf
1	1	Matheson	South Muskoka (Bracebridge)
	2	Porquis Jct.	
	3	Magnetawan	
2	1	Carp	Scott (Uxbridge)
	2	Richmond	Durham Central (Orono)
	3	Renfrew	
3	1	Carrick (Mildmay)	Carrick (Mildmay)
	2	London Twp. (Ilderton)	Huron Twp. (Ripley)
	3	Caledonia	Caledonia

### GOVERNMENT GRANTS

The regular legislative grant earned by Societies is based on a three-year average of prize money paid to exhibitors. The percent or factor in 1956 was 26.7. No Society can draw more than \$1,000.00 as this is the maximum permitted by the Agricultural Societies Act. Societies spending more than 25% on harness racing receive a reduction in grant.

Amount of grant paid by groups:

Grants under \$200 .....	25
" from \$200 to \$400 .....	59
" " \$401 to \$600 .....	55
" " \$601 to \$800 .....	33
" " \$801 to \$999 .....	18
Maximum grant \$1,000 .....	56
Total .....	246

### Other Grants

Northern Ontario — Special .....	49
Field Crop Competitions .....	259
Commercial Features .....	141
Wet Weather .....	23
Centenary .....	12
Membership .....	10
Livestock Maintenance .....	2

In addition, capital expenditure grants were paid to 176 Societies.

### Judges

The policy of the Department supplying judges for Field Crop Competitions was amended during the year. Societies were required to obtain their own judges except in the case of Northern Ontario. Grants were increased from \$50.00 to \$75.00 for each competition conducted by a Society. The Department continued to supply judges for all Fairs in Northern Ontario.

### Association Activities

The Annual Convention held in Toronto in February was successful. Close to 800 delegates attended. The afternoon of the first day, also a special session in the morning, was devoted to problems concerning the A and B Fairs. The women's programme was most educational and, like that of the men, consisted of addresses and discussion meetings dealing with Fair and Agricultural Society problems.

During the year meetings were held in each of the 16 districts. District 10, Grey and Bruce Counties, held two meetings. A few additional meetings were held to arrange Fair dates. Timiskaming and Cochrane held a joint meeting at Cochrane.

Societies in Thunder Bay, Rainy River and Kenora met at the Lakehead for the district meeting, with the Lakehead Exhibition acting as host.

Other meetings were held in the north at Warren, Bruce Station and Mindemoya. The Association was represented at all of the meetings by a representative of the Branch.

### Board Meetings

Four meetings of the Board were held and two of these took place at time of annual Convention in February. The election of officers took place at the board meeting prior to the commencement of the convention.

Two executive meetings of the A and B Fairs Section were also held at convention time.

### Coloured Photographic Competition

This contest is now in its third year and is supported by the Canadian National Exhibition, which provides \$350.00 in cash prizes. The contest was open to all Agricultural Societies submitting slides by December 1st. Caledonia Society was championship winner in A and B Fairs class, while Drumbo was champion of C Fairs class.

### C.N.E. Exhibit

The Association once again staged an exhibit at the C.N.E. The new location coupled with the fact the exhibit had a better appearance and some moving objects, made it more popular than usual. Assistance in staffing the exhibit was given by Fair Boards near Toronto.

### Service Diplomas

Many Societies make use of these diplomas to recognize faithful service given Agriculture and the society by local citizens. Ninety diplomas were awarded during



the year. In most cases a dinner or other special event was held in conjunction with the presentation.

### Canadian Association of Fairs and Exhibitions

This organization met in Toronto following the Royal Winter Fair. The Ontario Association is a member and its secretary makes it a point to attend each meeting. Numerous problems concerning Fairs were discussed.

### Judges' Schools

Through this Branch the Ontario Department of Agriculture sponsored schools for judges at O.A.C. Guelph, Kemptville and the Canadian Lakehead during the summer.

Those at Guelph and Kemptville were for women judges only and covered a period of 3 days. Applications were accepted from 60 at each point as this was the number that could be satisfactorily accommodated. A few late applications had to be refused because of this.

With the exception of the school at the Lakehead, the Home Economics Service, Extension Branch, directed and planned the programme in co-operation with officers of the women's section of the Association. Many favourable reports were received from those who attended these schools.

The programme at the Lakehead was carried out during the Exhibition and differed somewhat from the other schools. Instruction in judging was given to both men and women by judges supplied the Exhibition through the Department of Agriculture. The Agricultural Representatives in Rainy River, Kenora and Thunder Bay assumed the responsibility of recommending those who should attend. Excellent co-operation was given by the Fair Board, the local Agricultural Representative and the Home Economist. Attendance was satisfactory and the course proved so popular that a similar course will be held during 1957.

## AMENDMENTS TO THE AGRICULTURAL SOCIETIES ACT — 1956

### Age of Members

Every person is entitled to be a member of a Society but no person under 18 years of age is eligible to vote at any meeting of the Society or to hold office in the Society.

Prior to the Amendment a person had to be 18 to become a member. The change permits Societies to accept 4H Club members and pupils enrolled in public and secondary schools, many of whom are below what was previously the minimum age.

### Age of Junior Directors

Upon the recommendation of the Superintendent the Minister may authorize any Society to elect not more than six additional directors and not more than six junior directors not over 26 years of age.

The maximum age of junior directors has been reduced from 30 to 26.

### Directors May be Elected in Rotation

Where a Society is authorized to elect more than 12 Directors, it may elect all of its directors in rotation but in that case no Director shall be elected for a term of more than three years.

Regardless of the number of Directors, it was previously necessary to have the full quota of Directors elected at the Annual Meeting. Societies electing 12 must still do so, but if the Board has had permission to elect 15, five could be elected for a 3-year term, five for 2 years and five for 1 year.

### Commercial Features and Field Crop or Other Competition

Where a Society exhibits a display of a farm product that is produced on a commercial basis in the locality served by the Society, or holds a field crop or other competition and such display or competition is approved by the Superintendent on a form supplied by the Department, a statement showing the particulars of the display or the competition, the number of entries and the expenditures, including prizes awarded in connection therewith, and statement is satisfactory to the Superintendent, the Society shall receive a grant equal to one-half the sum expended by the Society for the display or competition but in no case shall the grant be more than \$200.00 for a display or more than \$75.00 for a competition.

The above raises the grant to a Field Crop Competition from \$50.00 to \$75.00 and payment is based on one-half the expenditures incurred by the Society. Grants for Commercial Feature displays remain the same as they have been since the policy was introduced in 1949.

### Classifying Societies and Capital Grants

The Lieutenant-Governor, upon the recommendation of the Minister, may make regulations prescribing terms and conditions regarding capital grants and classifying Societies that are Societies within the meaning of the Act and designating the class to which every Society belongs.

## HORTICULTURAL SOCIETIES

It is satisfying to be able to report another successful year in horticultural endeavour in Ontario. This has been largely due to unified effort on the part of Officers and Directors of the Ontario Horticultural Association, coupled with the splendid work of local Societies. Few organizations can boast such an army of willing and unpaid workers, who strive for the betterment of their respective communities and the Province as a whole. Total membership to date is 36,363. Guelph had 1,261; Waterloo 1,238 and Barrie 876.

### Grants

The annual grant from the Provincial Government was \$25,000.00 and this was divided between 196 Societies. The factor used in apportioning the grant was 23.3 on membership and 14.0 on expenditure.

Five new Societies received grants on membership, namely: Georgetown, Powassan, Penetanguishene, Teeswater-Culross and Englehart.

<i>Year</i>	<i>Total Grant</i>	<i>Number of Societies</i>	<i>Total Membership</i>	<i>Total Expenditure</i>
1949	\$15,000.00	188	31,568	\$115,535.96
1952	\$20,000.00	200	34,938	\$103,415.61
1954	\$25,000.00	202	36,825	\$133,548.83
1955	\$25,000.00	202	36,363	\$141,183.45

#### Statistics — (129 Societies reporting)

- 95 Societies carried out various forms of public planting
- 100 Societies held various kinds of flower shows, both monthly and annual
- 45 Societies held garden competitions of various kinds
- 70 Societies promoted some form of junior work
- 13 Societies report wild flower essay competitions
- 18 Societies reported photographic competitions
- 44 Societies reported entries in birdhouse and poster competitions
- 787 Board meetings were held, which is quite good
- 794 Member or open meetings were held by Societies reporting
- 901 Members attended district meetings throughout the Province

#### District Meetings

Meetings were held throughout most of the Province, except in Northern Ontario where distances are so great that such gatherings are almost impossible.

Election of District Directors for the following year usually takes place at such meetings. It has been necessary to conduct an election by mail in Districts 10, 12 and 14.

#### Rural School Grounds

Continued activity was much in evidence in the improvement of rural school grounds in both Haldimand and Welland Counties, where such work was established some years ago. These are the only two counties in the Province that carry on an intensive campaign and results have been most pleasing. In Haldimand there were twenty-eight entries. The winning schools are listed below and each has been granted a Diploma of Merit from the Association.

Haldimand County — S. S. No. 21. So. Walpole TSA — Donald Young, Inspector  
 Welland County — S. S. No. 1. Wainfleet — E. G. Peterson, Inspector

#### Canadian National Exhibition

Through the generosity of the C.N.E., it was again possible to secure space in the Horticultural Building and a display of plants and shrubs was arranged by the Association.

A feature of this part of the work was the formal presentation of a Maple Tree to the people of Japan from the citizens of Canada, the presentation being made by Hon. W. A. Goodfellow, Minister of Agriculture for Ontario, and received by the Secretary, John F. Clark, for safe conduct to Tokyo for planting.

#### Standards of Judging

A booklet on flower judging standards was prepared by the Association. Printing and distribution have been undertaken by this Branch.



### Awards

The Association Board of Directors approved the following awards and these were presented at the Annual Convention in Hamilton.

Diploma of Merit .....	Geo. Allen, Welland Harvey E. Fraser, Pembroke R. F. Gunnell, Hamilton
Silver Medal and Diploma of Merit .....	Miss Ora G. Wickware — for twenty-five years of faithful service to the Association
Trillium Pin Award .....	Miss Gladys McLatchy, Richmond Hill

### Sponsored Tour to the Orient

In conjunction with the Massachusetts Horticultural Society, the Association sponsored a tour to the Orient, embracing Japan, Formosa, Hong Kong, Siam, Hawaii and the Canadian Pacific Coast. The Association Secretary, John F. Clark, was chosen as Tour Leader. The tour covered a period from September 17th to October 29th.

Almost the first item of business on reaching Japan was to participate in the ceremonial tree planting in Hibiya Park.

Many fine pictures of places visited were procured and these are being presented at Societies, Churches, Home and School Clubs and other organizations.

A similar tour is being sponsored for the Spring of 1957, to include Southern England, Northern France, Belgium, Holland and Luxemburg.

### Results of 1956 Photographic Competitions

<i>Section No. 1 — Any Garden Feature</i>	<i>Section No. 2 — View of Property from Street</i>
1st — H. E. Markle, Guelph	1st — G. Troughton, Burlington
2nd — J. E. Collens, Guelph	2nd — J. E. Collens, Guelph
3rd — Mrs. H. C. File, Napanee	3rd — Mrs. E. K. Dawson, Chesley

### Results of Wild Flower Essay Competition — Subject "Conservation of Wild Flowers"

1st — Mrs. F. E. Byers, Stouffville
cash \$10 and book "One Gardener to Another"
2nd — Mrs. L. A. Gilbert, Capreol
cash \$5 and book "One Gardener to Another"
3rd — Mrs. I. W. Yank, 221 Breezehill Ave., Ottawa
book "One Gardener to Another"

### Section for Teachers

1st — Miss Winnifred Wallington, 19 Appleton Ave., Toronto 10
cash \$5 and book "One Gardener to Another"
2nd — Mrs. K. McKercher, Roxborough
book "One Gardener to Another"
3rd — Mrs. F. McPherson, St. George, RR 1
book "One Gardener to Another"

## PLOWING MATCHES

Despite unsatisfactory weather conditions and delay in keeping work on farms up to schedule, 1956 proved to be a fairly good year for plowing match activities. Encouraging reports from Canadian and World Plowing Associations were received.

In Ontario, branch associations continued to sponsor matches as their main project and many of them co-operated with their Agricultural Representatives in staging junior matches and coaching days.

The following table shows matches held and entries:

<i>Events</i>	<i>1954</i>	<i>1955</i>	<i>1956</i>	<i>Senior Match Entries</i>		
				<i>1954</i>	<i>1955</i>	<i>1956</i>
Senior Matches .....	64	70	67	Tractors .....	1,644	1,516
Junior Matches .....	16	18	12	Horses .....	337	354
Coaching Days .....	33	38	17			
Home Plowing .....	2	3	5	TOTAL .....	2,001	1,870
District Matches .....	2	2	2			1,671

In examining reports received from the branch secretaries, some interesting data in regard to entries, membership, prize money, etc., was found.

### *High Entries*

Haldimand .....	64
East York .....	58
Halton .....	56

### *Membership*

North Dumfries .....	308
Blenheim .....	250
Oneida .....	215
East York .....	200

### *Prize Money*

King & Vaughan .....	\$848.00
Oxford County .....	832.00
Waterloo Township .....	735.00
Blenheim .....	687.00
North Dumfries .....	664.00
Welland .....	629.00
York North .....	534.00

*Attendance* — Blenheim, Haldimand, Welland, Wellington and East York each reported 1,000.

A total of \$21,241.70 was awarded as prizes in cash and goods by 64 Senior Matches and 2 District Matches. The 16 Junior Matches paid out \$1,362.00 for prizes.

## Branch Activities

Algoma District sponsored a home plowing competition for boys under 21 years. Spanish River match, organized in 1955, is creating a lively interest in good plowing and had 12 entries in their utility class. They wound up the day with a dance.

Six Nations Branch has been operating for 93 years. Their match was again a success and their special feature was their inter-school class.

Brant County sponsored a 4H Tractor Club and Junior Farmer match besides its own regular match.

Carleton held a drainage demonstration as a feature of their match and supported a junior match as well.

Keppel and Sarawak had 4 ladies among the 28 entrants who participated.

Haldimand got excellent support from the County Council — \$200.00 for the match and a similar amount to assist with expense of inter-county team at the International. They had 20 entries in the utility class.

Oneida receives a \$200.00 grant from Haldimand County Council and \$175.00 grant from West Haldimand High School area.

Halton Branch had 66 entries and 21 in utility class also co-operated in sponsoring a junior match. Farm machinery dealers had displays at the match.

Ontario, Durham - Northumberland, Peterborough, and Victoria held their matches as part of local day competition at the International.

Prescott organized during the year and is therefore the youngest match of any on the list. There were 32 plowmen participating.

Russell had demonstrations with power grader and bulldozer. The busy season seriously affected their entries.

Glengarry again worked with crop improvement association in staging a drainage demonstration on the day of the match.

Slate River Valley, in addition to holding their regular match, has been active in other projects. Westford Kiwanis Club paid prizes in junior classes.

Welland had a wardens' class, also horse drawing contest and machinery demonstration.

Wellington County held a safe driving competition and sponsored a pasture demonstration as part of the match programme.

North Wentworth did some good public relations work by entertaining Dundas Board of Trade.

East York had an attendance of 1,000 people and this past year held their 112th match. It is considered the oldest on record.

### Judges and Judging School

The Ontario Plowmen's Association co-operated with the Department in conducting a school for judges. It was held in Halton County and lands previously plowed by junior match contestants were used for scoring and discussion.

Forty-seven people, most of whom are experienced in judging plowing, took advantage of the training offered.

In keeping with the present policy of supplying judges, secretaries of branches and Agricultural Representatives requesting help were furnished with someone qualified to judge as well as coach.

### INTERNATIONAL PLOWING MATCH

Brooklin in Ontario County proved to be an excellent site from both the standpoint of soil conditions and its central location in the Province. It was easily reached from No. 7 and 12 highways as well as by county and township roads. Its close proximity to Hydro, telephone and water services added greatly to the set-up.

As was anticipated, Heber Down and his neighbours gave unstintingly of their farms for plowing, demonstrations and car parking.

The local committee under Mr. Down's direction and the capable leadership of its secretary, H. L. Fair, did a splendid job in looking after responsibilities of a local nature.

The weather was ideal and for the first time in many years no rain fell during the four days of the match.



While the attendance, estimated at slightly over 90,000, was not as high as expected, exhibitors reported a satisfactory interest from visitors regarding purchase of products on display. Many reported the situation to be better than average of previous matches and quite a number of the regular exhibitors said it was the best in their experience. Some of those exhibiting for the first time were very much surprised with the response from the public.

Two issues of the prize list were prepared and distributed, the first being a leaflet announcing regulations, classes and particulars regarding exhibit space and application for tractors and teams.

The final issue was the regular prize list, which included amount of prizes, names of donors, exhibitors, also committees and general announcements. The list contained 47 classes in plowing and 12 in farm welding. Prizes offered in cash trophies and trips had a value of \$17,500.00. Contestants were required to make entry and apply for tractors a week in advance of opening day. Only those who had won a first or second prize at a local match were eligible. The entry fee was raised from \$1.00 to \$2.00 and the minimum age was set at 14 years.

## Entries

<u>Days</u>	<u>Horse</u>	<u>Plowing</u>		<u>Welding</u>
		<u>Tractor</u>	<u>Total</u>	
October 9 .....	19	67	86	6
October 10 .....	32	136	168	22
October 11 .....	29	149	178	22
October 12 .....	31	135	166	16
Entries 1956 .....	111	487	598	66
Entries 1955 .....	47	564	611	86
Entries 1954 .....	130	739	689	81
Entries 1953 .....	106	582	688	75

Entries were lower than in 1955 because of the rule preventing those not having won 1st or 2nd prize in local match from competing. This rule was withdrawn for the match in Essex. Late harvesting throughout the season discouraged many plowmen from making entry.

## Caterers and Exhibitors

Tented City was occupied by 202 Exhibitors and 38 Food Caterers. The space occupied had almost 2 miles of frontage.

## Official Opening

The Match was opened by the Minister of Agriculture, Hon. W. A. Goodfellow. The Whitby Citizens' Band took part in the ceremony and led the official party on tractor-drawn wagons through tented city. Preceding the opening, the Association provided a complimentary dinner for 150 guests, including local committee, chairman, Ontario County councillors, local Township Councillors, County Wardens, Mayors and members of Parliament.

## Local Day

Plowing events on the first day, known as local day, were open to residents of the following counties — Ontario, York, Simcoe, Peel, Peterborough, Victoria,

Northumberland and Durham. Contributions to the prize list, amounting to \$2,459.00, were received from all of the counties participating.

### Inter-County Competition

On the recommendation of the Agricultural Representatives, teams entered in the Inter-County Competition were required to plow in two classes, one of which was a utility class. The highest aggregate score was the basis on which awards were made. 19 teams competed and the winner was Peel County, comprised of Robert Armstrong and Alex. H. McKinney, Brampton. Runner up was York County — John Pugh and Carl Timbers, Stouffville. Incidentally, the Peel team had won the Inter-Secondary School Competition in 1954 and 1955.

These boys, along with a manager, will receive a Canadian trip by British American Oil Company.

### Inter-Secondary School Competition

Fifteen teams entered the Inter-Secondary School Competition. It was won by Brampton District High School and team members were Bill Parkinson and Lee Wilkinson. This was the third win in succession for Brampton, although the 1956 team was not the same boys who won in 1954 and 1955.

Canada Packers provided a team trophy and a gold watch for each member. Principals, Agricultural teachers and school board, also Mr. Norman Davis and his associates in the Department of Education, have given excellent support to this project.

### Esso Championship Class

The 1955 Champions in horse and tractor plowing, George Markle, Alberton, and Charles Bonney, Princeton, were given a trip to Quebec and the Maritime Provinces last September by Imperial Oil. George Fletcher, Merlin, was the trip manager. The itinerary was arranged by Company officials in co-operation with plowing association and Provincial Departments of Agriculture. While in the Maritimes the boys participated in plowing matches and by this means were able to demonstrate how match plowing is done in Ontario.

The 1956 winners were Karl Watson, Forest, horse plowman, and Grant Wells, Stouffville, tractor plowman. These boys will receive a trip by Imperial Oil to the Province of Quebec in October, 1957.

### Ontario Championship Class

This has become a very essential and keenly contested class because of the fact it is from this class two winners are chosen to represent Ontario in the Canadian Championship Competition. Fourteen of Ontario's plowmen competed. Hugh Baird, Blackwater, was first and Douglas Reid, Brampton, a close second. Contestants were required to plow two lands and follow World Match rules.

### Canadian Championship Class

Six Provinces had entries in the contest, namely: Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba and British Columbia. Plowmen over 20

years of age and who had qualified in their own Province were eligible. The 12 contestants each plowed 2 lands, sod and stubble, and World Match rules were followed. A panel of judges was appointed by the Canadian Council under whose direction this class was conducted.

Hugh Baird and Douglas Reid, the Ontario boys, had the highest scores and were placed 1st and 2nd, but because no Province could have more than one representative compete in the World Match, Stanley Willis, Cornwall, Prince Edward Island, replaced Douglas Reid. Baird and Willis will compete in the World Match at Peebles, Ohio, in September, 1957.

#### Visitors' Classes

There were 31 entries in two classes open to plowmen from outside the Province. For the first time in several years there were no entries from the United States. Both classes were won by contestants from Manitoba, Art Tomlin and Cyril Heynes. These two placed 4th and 5th in the Canadian Championship Class.

#### Welding Competition

Classes were provided each day and entries totalled 66 as compared with 86 in 1955. The contest was again under the capable leadership of Prof. Jas. Scott, Agricultural Engineering Dept., O.A.C., Guelph, and judging was done by Mr. Ralph Stickney, Canadian Welding Bureau, Toronto.

Robert Blake, Simcoe, RR 5, won the championship in Oxy-Acetylene Welding and Grant Wells, Stouffville, the championship in Arc Welding.

#### Demonstrations

The Local Committee, in co-operation with the Ontario Plowmen's Association and various agencies, directed demonstrations on the following: Permanent Pasture, Drainage, Brush Spraying, Barberry and Buckthorn Control, Soil Tillage and Tree Planting. Visitors were also invited to see and visit that portion of the Down Farm where renovation took place a few years ago. The lay-out of fields for contour cultivation and crop rotation were features emphasized.

Two classes in contour plowing were held on the conservation area. The fields, already laid out in strips, were ideal for the type of plowing.

#### Banquet

At the conclusion of the Match, the City of Oshawa provided a complimentary banquet for all those who had any part in the match. It was held in Oshawa's new shopping centre and was well organized. Over 1,200 people attended. Entertainment was supplied by the Ontario County Junior Farmers and other local talent. This provided an opportunity to present the top prizes in each class as well as specials to winning plowmen.

#### Daily Programmes

A most important service was again given by the Family Herald and Weekly Star in printing and distributing daily programmes, also list of contestants and prize winners. This has proven to be a great convenience for all concerned with the match, particularly visitors.



### Public Address System

Hallidays Ltd., Burlington, again provided a public address system, also their sound truck with stage. This was used to good advantage for the official opening.

### Hydro

Representatives of the Ontario Hydro-Electric Power Commission working through the local area office did a fine job in arranging the necessary Hydro service. The project consisted of installing poles, transformers and lines in Tented City and removing same when the match finished.

### Telephone Service

The very best of co-operation was given by representatives of the Bell Telephone Company. The service was in operation well in advance of the match and continued efficiently throughout the four days.

### Headquarters Building

Pierson Building Products, Peterborough, again supplied a building for Administration offices.

### Provincial Police

Very efficient service was rendered by Ontario Provincial Police. Under the capable guidance of Sgt. Murray Bruce, the directing of traffic and policing of grounds was well organized. Their co-operation at all times made the task of operating the match a pleasant one for both the Ontario Plowmen's Association and the Local Committee.

### Wagon Tours

This feature has become a popular project for Junior Farmers and as was expected the Ontario County Juniors took advantage of the opportunity to be of help in the promotion of the match programme. They had everything well organized and the service they so willingly rendered was sincerely appreciated, particularly by match visitors.

### Farmstead Improvement Project

Ontario County made good use of the opportunity to "dress up" for the big event by sponsoring a competition in farmstead improvement. The County Federation of Agriculture took the lead and directed the project. Ontario County Council donated \$1,500.00, the Ontario Plowmen's Association \$500.00 and the Paint, Varnish and Lacquer Association \$500.00. The county was divided into 6 areas with two classes being established for contestants in each area.

Entries were received from 147 farms and judging was done in late September by W. A. Cockburn, Drumbo. Prizes were awarded winning contestants during the match. The championship award of a silver tray donated by Brooklin's Women's Institute was won by Mr. Charles Singleton, Uxbridge.

## WORLD PLOWING MATCH

Canada was represented at the World Plowing Match held at Shillingford, England, October 10, 11 and 12, by Bob Timbers, Stouffville, Ontario, and Ed. Demman, Portage la Prairie, Manitoba, and their trip manager, Russell Beilhartz, Bruce Station. 13 countries had entries. As individual contestants, Bob Timbers placed 4th with a score on two lands plowed of 152.40 points. The highest score, 165.75, was given Barr of Northern Ireland. Ed. Demman had a score of 147.50 and was placed 10th. The showing of the Canadians was excellent and had they been competing as a team instead of individuals, Canada would have won 3rd place. Northern Ireland's total score was 315.50, Great Britain 302.75 and Canada 299.90.

## Invitations from Counties

The 1957 match is scheduled for Norfolk County. Committees have been set up under the capable guidance of Geo. Bramhill, Agricultural Representative, and his assistant, J. R. Richards.

Invitations to hold the 1958 Match in the United Counties of Dundas, Stormont, and Glengarry and the 1959 Match in Wentworth County have been accepted. Possible sites have been examined in Stormont and Wentworth. Elgin County has asked to be host for the 1960 Match and the invitation has been approved.

## Canadian Council of Plowing Associations

A meeting of the Council was held during the Match and representatives were present from British Columbia, Manitoba, Ontario, Quebec, Prince Edward Island and New Brunswick. Officers elected were as follows:

President .....	Alex. McKinney Jr.
Vice-President .....	Elliott Robertson (P.E.I.)
Secretary .....	F. A. Lashley

Directors were elected for each province. Alex. McKinney was appointed for Ontario. He will also represent Canada on the World Plowing organization.

## GRANTS UNDER THE COMMUNITY CENTRES ACT — 1956, 1957

<i>Municipality</i>	<i>Halls</i>	<i>Centre</i>	<i>Amount</i>
Adelaide Twp. ....	Craithie .....		\$ 221.00
Bagot & Blythfield Twp. ....	Calabogie .....		205.00
Bertie Twp. ....	Stevensville .....		2,930.00
Chaffey Twp. ....	Spruceglen .....		4,390.00
Cumberland Twp. ....	Leonard .....		2,890.00
Day & Bright Additional Twps. ....	Sowerby .....		2,000.00
Darlington Twp. ....	Solina .....		2,064.75
East Gwillimbury Twp. ....	Sharon .....		595.00
East Gwillimbury Twp. ....	Holland Landing .....		880.00
Essa Twp. ....	Utopia .....		5,000.00
Evanturel Twp. ....	Heaslip .....		1,890.00
Fullarton Twp. ....	Russeldale .....		3,065.00
Gore Bay .....	Gore Bay .....		490.00
Grey Twp. ....	Ethel .....		1,765.00
Holland Twp. ....	Walter's Falls .....		850.00
Howich Twp. ....	Wroxeter .....		3,000.00

<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Huron Twp. ....	Reid's Corners .....	\$ 105.00
Laird Twp. ....	Bar River .....	390.00
Merrickville .....	Merrickville .....	1,010.00
Merritton .....	Merritton .....	5,000.00
Monck Twp. ....	Falkenburg .....	1,070.00
Monteagle & Herschel Twp. ....	Maynooth .....	280.00
Morson Twp. ....	Morson .....	1,740.00
Neebing Twp. ....	South Neebing .....	1,500.00
Orillia Twp. ....	Lake St. George .....	590.00
Osprey Twp. ....	Feversham .....	4,130.00
Osprey Twp. ....	Maxwell .....	2,500.00
Oshawa .....	Thornton's Corners .....	4,000.00
Oshawa .....	Woodview Park .....	2,045.00
Pakenham Twp. ....	Pakenham .....	1,545.00
Reach Twp. ....	Utica .....	2,285.00
Roxborough Twp. ....	Moose Creek .....	126.00
Scarborough Twp. ....	Cedarbrae .....	5,000.00
Scarborough Twp. ....	Heron Park .....	1,000.00
Southwold Twp. ....	Shedden .....	440.00
Sunnidale Twp. ....	New Lowell .....	2,500.00
Tavistock .....	Tavistock .....	5,000.00
Thurlow Twp. ....	Parkdale .....	1,230.00
Tiny Twp. ....	Wyebriidge .....	1,685.00
Toronto .....	John Innes .....	5,000.00
Toronto .....	S. H. Armstrong .....	5,000.00
Tyendinaga Twp. ....	Melrose .....	1,965.00
Vaughan Twp. ....	Richvale .....	600.00
Wellesley Twp. ....	Inwood .....	430.00
Total — 44 .....		\$90,401.75

<i>Municipality</i>	<i>Fields</i>	<i>Amount</i>
Ancaster Twp. ....	Lynden .....	\$ 1,145.00
Belle River .....	Ladouceur .....	1,220.00
Blenheim Twp. ....	Princeton .....	720.00
Charlottenburgh Twp. ....	Martintown .....	145.00
Clarence Twp. ....	Bourget .....	116.00
Elma Twp. ....	Monkton .....	580.00
Eramosa Twp. ....	Eden Mills .....	1,290.00
Essa Twp. ....	Angus .....	75.00
Flamborough .....	Strabane .....	1,005.00
Flesherton .....	Flesherton .....	295.00
Forest .....	Forest .....	650.00
Kemptville .....	Riverside Community Park .....	1,080.00
London .....	Meredith Park .....	890.00
London .....	C. R. Rowntree .....	3,270.00
London .....	West Lions Playground .....	2,235.00
London Twp. ....	Argyle .....	175.00
London Twp. ....	Smith Park .....	2,360.00
Lucknow .....	Lucknow — Victoria Park .....	250.00
Matilda Twp. ....	Brinston .....	107.00
Mariposa Twp. ....	Little Britain .....	175.00
Markdale .....	Markdale .....	700.00
Markham .....	Markham .....	910.00
Maryborough Twp. ....	Moorefield .....	105.00
Merrickville .....	Merrickville .....	45.00
Neustadt .....	Neustadt .....	100.00
Newcastle .....	Newcastle .....	150.00



<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Newmarket .....	Newmarket .....	\$ 485.00
Otonabee Twp. ....	Keene .....	250.00
Pickering .....	Pickering .....	500.00
Pickering Twp. ....	Brougham .....	985.00
Prescott .....	Prescott .....	995.00
Sault Ste. Marie .....	North Street .....	1,450.00
Sault Ste. Marie .....	Queen Elizabeth .....	3,350.00
St. Catharines .....	Lincoln Park .....	2,285.00
Teck Twp. ....	Wright-Hargreaves, Kirkland Lake .....	265.00
Tecumseh Twp. ....	Tecumseh .....	1,670.00
Thornbury .....	Thornbury .....	395.00
Tisdale Twp. ....	South Porcupine .....	1,445.00
Vankleek Hill .....	Vankleek Hill .....	230.00
Westminster Twp. ....	Murray Park .....	2,240.00
Total — 40 .....		<u>\$36,338.00</u>

*Out-Door Rinks*

<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Brooke Twp. ....	Inwood .....	\$ 1,290.00
Clarence Twp. ....	Bourget .....	120.00
Charlottenburgh .....	Martintown .....	145.00
Denbigh, Abinger & Ashby Twp. ....	Denbigh .....	235.00
Field Twp. ....	Field, S.S. No. 1 .....	305.00
Holland Twp. ....	Walter's Falls .....	5,000.00
Laird Twp. ....	Bar River .....	120.00
London .....	Silverwood Park .....	5,000.00
London .....	London South .....	5,000.00
Monteagle & Herschel Twp. ....	Maynooth .....	482.00
Oliver Twp. ....	Murillo .....	275.00
Orillia Twp. ....	Washago .....	1,565.00
Otonabee Twp. ....	Donwood .....	95.00
St. Catharines .....	St. Catharines Lions .....	3,235.00
St. Joseph Twp. ....	Richard's Landing .....	414.00
S.S. No. 1, Miscampbell .....	S.S. No. 1, Miscampbell .....	140.00
Toronto .....	Dufferin Park .....	5,000.00
Toronto .....	Earlscourt Park .....	5,000.00
Toronto .....	Kew Gardens .....	5,000.00
Toronto .....	Ramsden Park .....	5,000.00
Toronto .....	Rosedale Park .....	5,000.00
Toronto .....	Withrow Park .....	5,000.00
Total — 22 .....		<u>\$53,430.00</u>

*Arenas*

<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Brooke Twp. ....	Alvinston & Inwood .....	\$ 3,400.00
Campbellford .....	Campbellford .....	190.00
Dundalk .....	Dundalk .....	5,000.00
Little Current .....	Little Current .....	500.00
Point Edward .....	Point Edward .....	500.00
Sullivan Twp. ....	Desboro .....	2,500.00
Sullivan Twp. ....	Keady .....	500.00
Sullivan Twp. ....	Williamsford .....	5,000.00
Toronto .....	Ted Reeve .....	1,692.00
Wallace Twp. ....	Kurtzville .....	365.00
Winchester .....	Winchester .....	5,000.00
Total — 11 .....		<u>\$24,647.00</u>

<i>Arenas and Halls</i>		<i>Amount</i>
<i>Municipality</i>	<i>Centre</i>	
Bradford .....	Bradford .....	\$10,000.00
Cumberland Twp. ....	Navan .....	5,000.00
Glencoe .....	Glencoe .....	340.00
Freeman Twp. ....	Mactier .....	10,000.00
Preston .....	Preston .....	500.00
Vankleek Hill .....	Vankleek Hill .....	1,150.00
Total — 6 .....		<u>\$26,990.00</u>

<i>Pools</i>		<i>Amount</i>
<i>Municipality</i>	<i>Centre</i>	
Barton Twp. ....	Barton .....	\$ 5,000.00
Clinton .....	Clinton .....	2,500.00
Powassan .....	Powassan .....	1,700.00
Smooth Rock Falls .....	Smooth Rock Falls .....	4,500.00
St. Catharines .....	Burgoyne Woods .....	5,000.00
St. Catharines .....	Lancaster Park .....	5,000.00
St. Marys .....	St. Marys .....	3,915.00
Toronto .....	John Innes .....	5,000.00
Total — 8 .....		<u>\$32,615.00</u>

## *Extension Branch*

### FOREWORD

On April 1st, the re-organization of the Extension Branch of the Ontario Department of Agriculture took place. This was brought about by the co-ordination under one Branch of existing extension agencies. As a result the Extension Branch now includes five Services—the Agricultural Representative Service, the Home Economics Service, the Agricultural Engineering Extension Service, the Fruit and Vegetable Extension Service and the Tobacco Extension Service.

The Agricultural Representative Service, established in 1907, is the largest of the Extension Services, maintaining offices and personnel in each County and District in Ontario. The combined strength of the Agricultural Representatives, Associate Agricultural Representatives, Assistant Agricultural Representatives and the secretarial staff now numbers 137.

The Home Economics Service maintains a staff of Home Economists and Specialists. Homemaking Extension has been offered to Ontario women since the turn of the century and since 1921 through the Women's Institute Branch. This service is now co-ordinated in the Extension Branch.

The Fruit and Vegetable Extension Service, established in 1947, has at present a staff of ten specialists providing service in some of the main fruit and vegetable growing areas in Ontario.

The Agricultural Engineering Service, established in 1950, maintains a staff of eleven specialists offering service in the fields of farm machinery, buildings and drainage.

The Tobacco Extension Service is the smallest and youngest, being established in 1955 with the appointment of two specialists to assist with extension in the tobacco growing areas of the Province.

Each Service has a director and the work of all the Services is administered and co-ordinated by the Director of Extension.

The Extension Branch works closely with the programme carried on in educational and research institutions.

### AGRICULTURAL REPRESENTATIVE SERVICE

The Agricultural Representative Service in Ontario was again called on to serve the farm people in an expanded way during 1956-57. Much of this extra service was required because of the unusual character of the weather which predominated over the entire Province during the past cropping season.

During the Spring of 1956, Ontario experienced one of the wettest seasons on record which caused considerable delays in the planting of all types of crops. This factor alone resulted in considerable service being required of the Agricultural Representative in giving advice regarding alternate crops, and other recommendations to meet these conditions.



When the crop was finally planted, we experienced a period during the growing season which was very beneficial to the crops, with the result that by harvest time there was an excellent yield in sight. However, here again, the weather played an important part with the result that farmers had great difficulty in getting their crops off. Cereal crops which would normally be harvested early in August, were still in the fields late in October and many fields, even at that time, were inaccessible because of the wet condition of the ground. However, the final result was that, although most crops were weathered more than would have been desired, with considerable losses, there was still a sizable yield harvested in most areas.

This result can be attributed to a large extent to the fact that new varieties of cereal grains, particularly Rodney and Garry Oats, proved very resistant to the abnormal weather conditions and provided a much higher yield than could have ever been expected from older oat varieties. The same thing might be said of other crops which have replaced cereals in many areas, such as corn and soybeans.

The general price structure of farm products remained very stable during the whole year with a slight increase being recorded in most commodities. This increase, however, was more than offset by increasing production costs with the result that the farmer was becoming more and more conscious of the proper farm business management practices. To meet this need, the Agricultural Representative provided in most areas, special courses in farm business management which were very well attended.

The Agricultural Representative continued to give the usual attention to live stock and crop programmes in his area and provided direction to the ever-increasing activity in the Junior Programme.

#### Extension Work in Live Stock Improvement

With live stock and live stock products important to the economy of Ontario agriculture, it follows that a considerable amount of the Agricultural Representative's time is spent in this phase of Extension.

The Agricultural Representative is concerned with the promotion of policies adopted by the Department of Agriculture with regard to live stock and assists the various Live Stock Breeders' Clubs with their active programmes. There were 206 live stock clubs of various kinds organized in the Province of Ontario in 1956, and of these, the Agricultural Representative or his Assistant, served in 67 cases as the Secretary-Treasurer. In all the others he played an active part in the promotion of their activities. During the year these clubs conducted a total of 111 breed shows, and in addition, there were 48 consignment sales sponsored by the local Breeders' Clubs, at which 1,465 head of live stock were sold.

The Artificial Insemination Programme across the Province continues to expand and the Agricultural Representative has a responsibility in maintaining the local organization in this phase of the work.

Similarly, in the Dairy Herd Improvement Programme where there were 57 active associations in 1956, the Agricultural Representative served to co-ordinate this organization in promoting its work. There were 1,363 herds enrolled in Dairy Herd Improvement Work in Ontario in 1956.

The Brucellosis Control Act of 1956 was enacted during the year and replaced the Brucellosis Control Act of 1953. This programme provides a service for the vaccination of all calves within a specified area where the Act is in effect. The

Agricultural Representative has considerable responsibility in the local organization. The main difference in the 1956 Act over the 1953 Act is that the Province assumes the entire cost of the vaccination programme. Last year there were a total of 304,299 calves vaccinated in this programme.

The Agricultural Representative has a similar responsibility in the carrying out of the Warble Fly Control Programme which was active in 36 counties in the Province.

He assists in the Bull Loaning Policy which provides assistance to farmers in providing herd sires of high quality in areas where they are difficult to secure. These clubs are particularly active in Northern Ontario. In all, there was a total of 77 organized in 1956.

Swine Improvement comes in for special attention by the Agricultural Representative. A number of special swine meetings are held during the year and the chief topic for discussion at these meetings concerns swine marketing and carcass quality.

Extension work with sheep forms but a small part of the Agricultural Representative's work. Very successful Lamb Fairs continue to be held in a number of areas in Northern and Eastern Ontario, and in these same sections parasite control and sheep dipping demonstrations are conducted. There is some additional interest in sheep work in the 4-H Club programme.

A number of poultry meetings have been held during the year but the Agricultural Representative is not as active in this work as in other types of live stock. Much of this work is carried out by the staff of the Poultry Department at the Ontario Agricultural College. It is interesting to note however, the increasing number of broilers that are placed on farms from year to year. During 1956, it was reported that more than twenty-one million broilers were placed on Ontario farms and total marketing during that period was in excess of eighteen million.

#### Extension Work in Soil and Crop Improvement

This particular phase of Extension is one of the most important in the Agricultural Representative programme. In every County and District the Agricultural Representative is Secretary-Treasurer of the Soil and Crop Improvement Association and is responsible in a large measure for its direction.

A total of 4,640 demonstration and test plots dealing with varieties and fertility recommendations were reported. These are arranged to meet the needs of the wide variation of cropping practices found in Ontario. One hundred and one field meetings and fifty-seven field tours were conducted to observe the demonstrations and provide information on the growing and harvesting of these crops.

Soil tests on individual farms is the chief method used to determine soil fertility requirements. During the year 7,928 soil analysis reports were channelled through the Agricultural Representative's office providing an opportunity for discussion with the farmer.

Thirty-nine County Seed Fairs were conducted with a total attendance of 28,380. Agricultural Representatives act as managers of these fairs and arrange educational programmes to stress the use of clean, high quality seed. Three district Seed Fairs were conducted at London, Peterborough and in the Ottawa Valley.

Thirty-two drainage demonstrations were held, mostly in Eastern Ontario,

to focus attention on proper under-drainage, surface drainage and outlets where these are limiting factors in crop production. The Extension Branch is co-operating with the Municipal Councils to defray expenses of transportation on tile and heavy equipment for these demonstrations.

Farm ponds are also constructed under this Policy and Agricultural Representatives reported an estimated 1,403 ponds constructed in 1956, bringing the total estimated number of ponds in Ontario to 7,214.

More farmers are availing themselves of the Farm Planning Service offered by the Ontario Department of Agriculture to improve farm operation, production and management. This service is now being used by 633 farmers and there is an increasing number of applications.

#### Assistance to Northern Ontario Farmers

To promote the development of agriculture in Northern Ontario, certain policies were adopted by the Ontario Department of Agriculture in 1946. The most important was the Clearing and Breaking of Land and in 12 years 107,758.9 acres were cleared under this Policy. In 1955 the Agricultural Representative Branch assumed the responsibility for the administration of the policies in respect to land clearing, breaking, farm water supply, weed control equipment, potato graders, community centres, agricultural societies and freight assistance.

The following summary indicates the extent of Northern Ontario assistance during the last fiscal year.

#### SUMMARY OF NORTHERN ONTARIO ASSISTANCE DURING 1956-1957

<i>District</i>	<i>No. of Farmers Assisted</i>	<i>Acres Cleared</i>	<i>Acres Broken</i>	<i>Subsidy Paid Clearing</i>	<i>Subsidy Paid Breaking</i>	<i>Total Subsidy Granted</i>	<i>No. Wells</i>	<i>Total Subsidy Granted-Wells</i>
Algoma	18	91	104	1,092.00	624.00	1,716.00	2	293.91
Cochrane N.&W.	290	1,869	1,637	22,318.46	9,793.50	32,111.96	16	2,658.36
Cochrane S.	73	463½	487	5,368.37	2,924.51	8,292.88	8	1,855.31
Kenora	24	138½	147½	1,609.79	869.55	2,479.34	---	---
Manitoulin	26	171	181	2,044.80	1,053.80	3,098.60	4	546.27
Muskoka & Parry Sound	28	140	130	1,680.00	780.00	2,460.00	4	506.26
Nipissing	78	519	466	6,228.00	2,796.00	9,024.00	29	6,560.14
Rainy River	87	639	577	7,653.00	3,438.00	11,091.00	5	754.43
Sudbury	37	195	205	2,338.24	1,226.00	3,564.24	6	802.66
Temiskaming	320	2,871	2,891	34,538.81	17,346.00	51,884.81	14	3,234.32
Thunder Bay	84	577½	603½	6,888.46	3,500.90	10,389.36	15	2,765.30
	1,065	7,674½	7,429	\$91,759.93	\$44,352.26	\$136,112.19	103	\$19,976.96

#### Extension Work in Farm Business Management

More farmers are interested in better farm business management methods as evidenced by the fact that 199 farm business meetings were held with an attendance of 4,348.

Farm Business Management Associations are now organized in 26 Counties with 39 Associations having 949 members. These groups of farmers study together the factors affecting their farm income and, with the assistance of the Agricultural Representative, analyze their farming operations.

Agricultural Representatives are also performing an individual service for



farmers who request a business analysis of their farm, but are not members of a farm business association.

In several counties three-day courses have been held to familiarize farmers with the proper method of using the Farm Account Book as well as the short form of Farm Business Analysis.

#### Rural School Fairs

Agricultural Representatives report 92 School Fairs involving 679 schools were held in 26 Counties.

A few Agricultural Representatives assist the teachers or School Boards on Fair Day by judging some of the classes.

These fairs provide an excellent contact with young farm people and help provide members for junior work.

#### Agricultural Societies

Agricultural Representatives have been associated with Agricultural Societies and promoted the breeders' organization shows.

The Agricultural Societies sponsor the 4-H Clubs and the Achievement Days are usually held at the local fairs.

It provides a good medium to meet and work with farmers over a large area.

#### Plowing Matches

A total of 58 senior matches and 21 junior matches or home plowing competitions were held in 37 counties. These matches, as well as machinery or drainage demonstrations are supported by the Agricultural Representatives and Agricultural Engineering Specialists.

#### Rural Community Night Schools

Thirty-five Rural Community Night Schools were held in 29 Counties sponsored jointly by the Department of Agriculture and the Department of Education. The total enrolment was 5,386 with 61% rural people. These courses provide information on a wide range of subjects for farm families.

Courses of three-days' duration or more were held in 22 communities with an attendance of 2,143. Fifty-eight Courses of less than three-days' duration were held in 10 Counties.

In all cases the Agricultural Representatives gave assistance to the schools and in some cases, organized and provided part of the instruction on agricultural topics.

#### Extension Work Through Press, Radio and Television

Many of the Agricultural Representatives contribute a column to the county weekly papers and 3,633 press releases were supplied to weekly and daily papers.

These releases give timely information on agricultural topics designed to meet the needs of the community.

Radio broadcasts on a weekly or monthly basis are conducted by the Agricultural Representatives or Assistants giving general information and observations on crops, live stock and farm organizations. Some 1,620 radio broadcasts were presented.

Extension personnel presented 132 and gave assistance with 126 Telecasts.

The Agricultural Representatives estimated that over 50% of the farm homes have television sets.

### Courses for Extension Personnel

Two one-week courses in Extension Education were held for 40 staff members of the Branch.

Topics included on the programme were "Principles and Objectives of Extension", "Leadership Principles and Practices", "The Learning Process", "Evaluation", "Extension Work in a Changing Society".

In addition, those participating in the course took part in group discussions and prepared reports on such subjects as "Problems of the Low Income Farmer" and "The Future Role of Extension Workers".

All Agricultural Engineering Extension Specialists attended a one-week course which included papers on latest trends in farm structures, building materials, agricultural machinery and allied topics.

### 4-H CLUB PROGRAMME

In 1956, a total of 21,988 young people were enrolled in this programme in Ontario. Each of these young people, who range in age from 12 to 20 years, carried on an active project located on the home farm. The Agricultural Representative Service takes the major responsibility for the direction and management of 4-H Agricultural Club Work in Ontario, and pays one-third of the prize money to the Club members. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service. Following is a summary of the 4-H Clubs organized in 1956:

<i>Agricultural Clubs</i>	<i>No. Clubs</i>	<i>Membership</i>
4-H Calf Clubs .....	308	5,788
4-H Swine Clubs .....	46	580
4-H Sheep Clubs .....	3	35
4-H Poultry Clubs .....	24	444
4-H Grain Clubs .....	134	2,165
4-H Potato Clubs .....	62	1,131
4-H Forage Clubs .....	5	67
4-H Tractor Maintenance Clubs .....	50	795
4-H Forestry Clubs .....	27	552
Miscellaneous 4-H Clubs .....	12	199
	<hr/> 671	<hr/> 11,756

*Homemaking Clubs*

4-H Clothing Clubs .....	428	4,008
4-H Food Clubs .....	310	3,082
4-H Home Garden Clubs .....	150	1,117
4-H Hospitality Clubs .....	50	471
4-H Housefurnishing Clubs .....	91	787
4-H Defence Clubs .....	80	767
	<hr/> 1,109	<hr/> 10,232
	<hr/> 1,780	<hr/> 21,988

**Voluntary Leadership**

With the ever-increasing membership in 4-H Club Work in Ontario, the work of the Voluntary Club Leader in assisting the Agricultural Representative with this work has become increasingly important. Last year there were about 1,100 Leaders working on a voluntary basis in the various counties, assisting in many ways in the promotion of Club Work.

In many of the counties, the work of the Club Leaders is co-ordinated by a Club Leaders' Council. The Department of Agriculture provides an opportunity for Club Leaders to meet in the various counties to plan programmes and to evaluate the results of the work being carried on. A special short course for 4-H Club Leaders is provided during Short Course Week at the Ontario Agricultural College, early in the year.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip to the Royal Winter Fair. A complimentary trip was also provided to the Ontario Soil and Crop Improvement Association Convention for those Club Leaders who did not wish to attend the Royal Winter Fair.

**4-H Inter-Club Competitions, New Liskeard**

The third Annual 4-H Inter-Club Competitions were held for Northeastern Ontario, at the Demonstration Farm, New Liskeard, on October 5th, for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were 86 boys and girls in 43 teams taking part in agricultural club projects. The winners were:

<i>Project</i>	<i>Teams Com- peting</i>	<i>Team Members</i>	<i>District</i>	<i>Coach</i>
Dairy Calf ....	11	Rejean Leveille, Earlton Bernadette Beauchamp, Earlton	Temiskaming	M. F. Cook G. M. Mills
Beef Calf .....	14	Allan McPhee, Ophir Richard Pollard, Bruce Mines	Algoma	J. M. MacIntosh Harold Martin, Fieldman
Potato .....	14	Barry Henson, Ophir Pat Stewart, S. S. Marie #1	Algoma	J. M. MacIntosh Harold Martin, Fieldman
Forestry .....	4	George Emiry, Massey Mack Emiry, Massey	Sudbury	R. Leroux A. Chalk, Zone Forester



### 4-H Inter-Club Competitions, Guelph

The 4-H Inter-Club Competitions for provincial honours were held at the Ontario Agricultural College, Guelph, on October 19th, 1956, with 506 boys and girls in 253 teams taking part in agricultural club projects.

<i>Project</i>	<i>Teams Com- peting</i>	<i>Winning Team Members</i>	<i>County</i>	<i>Coach</i>
Dairy Calf ....	55	Beverley Burr, Gormley #2 Margaret Brodie, Gormley #2	York	W. M. Cockburn E. K. Pearson
Beef Calf .....	41	Helen Anderson, Glen Cross Sheila Anderson, Glen Cross	Dufferin	J. B. Matheson
Swine .....	14	Lynne Coulter, Campbellville #3 George Greenlees, Campbellville #3	Halton	J. E. Whitelock A. G. Bennett
Poultry .....	13	Diane Haggerty, Cherry Valley #1 Patricia Dunkley, Picton #10	Pr. Edward	D. A. Taylor
Grain .....	64	Francis Doris, Peterborough #8 Melville Chamberlain, Peterborough #7	Peterboro	F. C. Paterson K. E. Best
Potato .....	18	Garth McGill, Enniskillen #1 Bert Werry, Enniskillen #1	Durham	E. A. Summers
Tractor Maintenance	34	Douglas MacRobbie, Guelph #6 Robert Gordon, Aberfoyle	Wellington	W. D. Black H. G. Norry H. E. Wright
Forestry .....	14	Michael Hart, Pickering #2 Craig Peters, Box 5, Claremont	Ontario	H. L. Fair S. MacDonald R. J. Bugar

On Saturday, October 20th, an educational tour of the Ontario Agricultural College was provided during the morning for those contestants who wished to participate.

### Canadian Council on 4-H Clubs

This organization is set up for the primary purpose of correlating and co-ordinating the various provincial 4-H Club programmes across Canada. The organization is composed of representatives from the Canada Department of Agriculture, as well as from the ten Provincial Departments of Agriculture, together with 35 industrial members and 13 associate members who represent various national agricultural organizations.

R. G. Bennett, Associate Director of Extension in charge of 4-H Club Work in Ontario, serves as a Provincial Director on the Council.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300 to the Council.

### National 4-H Club Week

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

No National Judging Contests were held in 1956. Ontario had the opportunity of selecting 14 delegates to attend National Club Week. Five of the delegation were

selected from 4-H Homemaking Clubs, and 9 from 4-H Agricultural Clubs. Those selected were as follows:

*4-H Homemaking Club Delegates:*

Beverly Blake, RR #4, Ramsayville, Carleton County  
Helen French, RR #2, Mitchell, Perth County  
Eileen Jewell, RR #2, Dutton, Elgin County  
Emily Kaufman, RR #4, Chesley, Grey County  
Barbara Mann, RR #4, Peterborough, Peterborough County

*4-H Agricultural Club Delegates:*

William Baxter, RR #2, Springfield, Elgin County  
Irene Campbell, RR #3, Metcalfe, Carleton County  
Murray Dawson, RR #1, Hensall, Huron County  
Douglas Detlor, RR #4, Stirling, Hastings County  
Wm. Patterson, Foresters Falls, Renfrew County  
Alvin Runnalls, Barrie Island, District of Manitoulin  
Earl Scott, RR #2, Paris, Brant County  
Gary Taylor, RR #1, Pefferlaw, Ontario County  
Robt. Williams, RR #1, Picton, Prince Edward County

## JUNIOR PROGRAMMES AT CLASS "A" EXHIBITIONS

### Central Canada Exhibition, Ottawa

There were 98 teams competing on August 21st, 1956, in the General Agricultural Competition, represented by 280 Club members.

A Club Camp was held in connection with this Competition. Camp members spent a day at the Experimental Farm, were entertained at a play party and dance, and taken on a sight-seeing tour around Ottawa. There were some 500 boys and girls attending this camp.

A special feature of the camp was a parade to the grandstand by counties, which was judged and prizes awarded.

### Peterborough Exhibition

A total of 93 boys and girls took part in the Junior Agricultural Programme, at Peterborough Exhibition, on August 9th, 1956.

The programme included Live Stock Judging Competitions, a General Quiz on Agriculture, a Tractor Defects Test, as well as an Identification Test in General Agriculture, Forestry and Conservation. In the evening, the Juniors were guests of Canada Packers at a dinner and were guests of the Exhibition at the evening grandstand performance.

### Canadian National Exhibition, Toronto

There were 182 contestants taking part in the Live Stock Judging Competitions, and 76 contestants taking part in the Fruit and Vegetable, Grain and Roots and Farm Machinery Test Competitions, and 15 in the Tractor Safe Driving Competition, on Wednesday, September 5th, 1956.

The boys and girls taking part in these competitions were provided with an

evening meal, a pass to the grounds and a ticket to the evening grandstand performance through the courtesy of the Canadian National Exhibition Association.

### Western Fair, London

There were some 136 boys and girls taking part in the Junior Agricultural programme at Western Fair, on September 10th, 1956.

In addition to the Live Stock Judging Competitions, the programme included a conducted tour of various educational exhibits at the Fair as well as an Agricultural Identification Quiz. Each contestant was required to answer a series of questions based on what was seen during the tour of the Exhibition. The contestants were served dinner through the courtesy of the Western Fair Association and were also their guests at the evening grandstand performance.

### INTER-COUNTY LIVE STOCK JUDGING COMPETITIONS

#### Royal Winter Fair, Toronto, November 8th, 1956

Eighteen teams were entered, comprised of 3 contestants per team.

JEFFREY BULL MEMORIAL TROPHY—Won by Halton County.

Winning Team Members—Lynne Coulter, Campbellville #3.

George Greenlees, Campbellville #3.

Bill Robinson, Oakville #1.

Coaches: J. E. Whitelock, Agricultural Representative.

A. G. Bennett, Associate Agricultural Representative.

#### Ontario Veterinary Challenge Trophies

*Dairy Cattle*—Won by Carleton County.

John K. Campbell, Metcalfe #3.

Ray Faulkner, Stittsville.

John White, Billings Bridge #1.

*Beef Cattle*—Won by Huron County.

Bert Pepper, Seaforth #3.

David Kirkland, Lucknow #3.

Murray Gaunt, Lucknow #1.

*Swine*—Won by Prince Edward County.

John Dorenberg, Picton #4.

Theodore Foster, Hillier #2.

Robert May, Picton #8.

ROBERT GRAHAM MEMORIAL TROPHY—10 entries.

Won by: Jack Riddell, Ontario Agricultural College, Guelph

E. H. STONEHOUSE MEMORIAL TROPHY

Won by: John K. Campbell, Metcalfe #3, Carleton County

F. K. MORROW SCHOLARSHIP AWARD—16 entries.

Won by: Robert May, Picton #8, Prince Edward County

*Gold Medals* were awarded to the top contestant in each of the breeds of live stock judged.



**Ottawa Winter Fair, October 23rd, 1956**

Eight counties were entered, represented by 35 contestants.

**OTTAWA WINTER FAIR TROPHY**—won by Hastings County.

Winning Team Members—Douglas Rollins, Plainfield #1.  
Harold Harris, Madoc #2.  
Harry Danford, Springbrook.

Coaches: A. O. Dalrymple, Agricultural Representative.  
J. A. Francis, Associate Agricultural Representative.

*Silver Medals* were presented to top contestants in each of the breeds of live stock judged.

**INTER-COUNTY SEED JUDGING COMPETITIONS****Ottawa Winter Fair, Ottawa, October 24th, 1956**

Five counties were entered represented by 23 contestants.

**NETTLETON CHALLENGE TROPHY**—won by Renfrew County.

Coached by: F. Q. Dench, Agricultural Representative.  
J. D. Butler, Associate Agricultural Representative.

**Central Ontario Spring Show, Peterborough, March 19th, 1957**

Won by: Durham County.

Coached by: E. A. Summers, Agricultural Representative.

**JUNIOR FAIRS****4-H Calf and Swine Club Championship Show, Ottawa**

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Departments of Agriculture, staged the Eastern Ontario 4-H Calf and Swine Club Championship Show during the Ottawa Winter Fair, on October 26th, 1956.

Fourteen counties from Hastings, Prince Edward and East, exhibited at this Show.

*Entries*

Holstein calves .....	284
Ayrshire calves .....	56
Jersey calves .....	27
Guernsey calves .....	20
Shorthorn calves .....	18
Hereford calves .....	38
D.P. Shorthorn calves .....	5
Baby Beef calves .....	22
Aberdeen Angus calves .....	6
Swine .....	40

**Queen's Guineas Class, Royal Winter Fair, Toronto**

At the Royal Winter Fair, on Thursday, November 15th, 196 4-H Club members entered baby beef calves in this class.

The Aberdeen Angus steer shown by Donald Pullen, R.R. #1, Granton, Ontario, was made Grand Champion of this Class and the Queen's Guineas and the Hon. T. L. Kennedy Trophy were presented by The Honourable Louis O. Breithaupt, Lieutenant-Governor of Ontario, and Dr. C. D. Graham, Deputy Minister of Agriculture, respectively. Following is a summary of this class:

<i>Entries</i>	
Shorthorn .....	71
Angus .....	70
Hereford .....	55
	<hr/>
	196

#### FIRST PRIZE CALF IN EACH CLASS

Aberdeen Angus—Donald Pullen, R.R. #1, Granton.  
 Shorthorn—Barry McQuillin, R.R. #1, Lucknow.  
 Hereford—Ronald McLean, R.R. #1, Melbourne.

#### WINNER OF QUEEN'S GUINEAS—\$250.00.

Donald Pullen, R.R. #1, Granton.  
 Weight of calf—1,010 lbs.  
 Sale Price—\$1.75 per lb.

#### RESERVE CHAMPION

Barry McQuillin, R.R. #1, Lucknow.  
 Weight of calf—905 lbs.  
 Sale Price—55¢ per lb.

AVERAGE SALE PRICE PER LB. OF CALVES EXCLUSIVE of Champion and Reserve Champion—28.8¢.

#### JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the programme of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment", offer a programme to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension personnel.

#### Junior Farmers' Association of Ontario

There was an increase of 337 in the provincial membership, making a total of 7,345 members affiliated with the Junior Farmers' Association of Ontario in 1956-57. Records show a total of 270 Junior Farmer and Junior Institute Clubs active at the present time in Ontario.

For the first time, provincial membership cards were issued to all affiliated members and a duplicate list of members from each county filed in the Agricultural Representative's office. Membership cards have assisted greatly with the eligibility of those participating in projects sponsored by the Association.

The Association has maintained its membership extremely well, particularly in view of the decreasing farm population and the large numbers of young farm people of Junior Farmer age who are seeking off-the-farm employment.

As a result of the provincial membership cards on which each member was

asked to give his or her age, some knowledge was gained of the average age of Junior Farmer members in Ontario. Through a survey conducted of 2,475 members in all counties and districts in Ontario, the average age was found to be 19.9 years. Five per cent of the membership listed ages of 28 years and over.

The office of Secretary-Treasurer of the Association is held by one of the Associate Directors and for that reason the work of the Branch is closely associated with Junior Farmer Work throughout Ontario.

### Projects

Provincial projects for Junior Farmers in Ontario are of two kinds, those sponsored directly by the Association and those sponsored by the Association in co-operation with the Ontario Department of Agriculture or other agencies. An excellent response continues to be received in all provincial projects.

### Public Speaking and Debating

The Provincial Public Speaking Competition attracted 24 participants representing many local and county competitions throughout the Province.

The one hundred dollar educational scholarship offered by the Association to the high ranking contestant was awarded to David Stager, Lincoln County. Four contestants receiving honourable mention were Bill Boulton, Leeds County, Jackson Reed, Peel County, Gloria Rutledge, Bruce County, and Bertha Watson, Halton County.

Nineteen counties made entries and competed in the preliminary round of the Provincial Debating Competition. The topics selected for this year's debates, up to and including the finals, were as follows:

Round 1 and 2 — "Resolved that a reduction in the number of farm organizations in Ontario would be in the best interests of the Ontario farmer".

Round 3 and semi-final round — "Resolved that a greater supply of credit rather than more agricultural education would more adequately establish young people in farming in Ontario".

Final round — "Resolved that the establishment of farms in Ontario on the 100-acre unit basis is detrimental to sound economic advancement of Ontario's agriculture".

The debating competition provides much information for the participants and audiences and also affords an excellent opportunity for training in public speaking.

### Choirs, Quartets and Trios

Six Junior Farmer choirs participated in the choir festival held in Toronto before a large audience. This was the largest choir festival held by the Association to date. Dr. G. R. Fenwick, the choir critic, was complimentary of the quality of all choirs. In addition, twenty-four quartets and trios participated in the quartet and trio competition from which the Brant County mixed quartet, the Ontario County ladies' trio, and the Haldimand male quartet, emerged victorious.

### Leadership Training Schools

During the year, five one-day leadership training schools were held on a district basis and were organized and conducted by the officers and directors of the Association. Leadership training schools for Junior Farmers continue to attract larger



numbers of members and officers and have provided much useful help and information to strengthen the local and county programmes among the Associations.

### Conferences

Two conferences as well as the Provincial Conference and Annual Meeting of the Association were organized by the Association.

The Junior Farmer Conference in Toronto this year had a registration of seven hundred and fifty-five people. The programme, which represented the finals in the public speaking competition, the quartet and trio competition, and the choir concert, was of the highest calibre. This year, educational exhibits arranged by several counties provided extra educational information for the conference delegates, as did the demonstration "Time is Money".

In Eastern Ontario a highly successful one-day conference was held at the Kemptville Agricultural School with approximately 175 in attendance. An educational programme organized by the Junior Farmers in line with the needs and wishes of the Junior Farmers in Eastern Ontario was well received.

Two Junior Farmer conferences in Northern Ontario which have been held annually for the past nine years have been changed to include more 4-H Club members and activities. This is in line with the changing needs in the Northern Ontario districts.

### Sports Projects

Four Junior Farmer Field Days were held at Guelph, Ridgeway, Belleville, and Kemptville.

A provincial curling bonspiel was also conducted at Peterborough with 28 rinks participating.

### Rat and Mouse Control

A new project was sponsored by the Provincial Association with the co-operation of local and county associations in 1956 entitled the "Junior Farmer Rat and Mouse Control Campaign". Thirty-nine local and county clubs took part in this project. The response to this project was higher than provincial officers anticipated and demonstrates the demand for economic projects in the Junior Farmer programme.

### T.V. Competitions

Junior Farmers from 9 counties participated in two T.V. competitions held in co-operation with two local television stations. These competitions were judged by an adjudicator who watched the programme from his home television set. Approximately 50 Junior Farmer members participated in these competitions. The calibre of the programmes presented can be judged by the fact that the C.B.C. invited the winners of both competitions to present their programmes on "Country Calendar".

## EXCHANGE VISITS

### International Exchange Visits

Four young people — Miss Myrtle Stewart, Dufferin County; Miss Eleanor Lillico, Carleton County; Malcolm McLaren, Renfrew County; and David Barrie,

Waterloo County, under the leadership of Mr. R. H. Graham, Ontario Department of Agriculture, visited Great Britain and Northern Ireland. Four Scottish, three Irish, and four English Young Farmers visited in Ontario during the 1956 summer months. These were Miss Mary Adam, Alasdair Grant, Robert Howie, David Oag from Scotland; Miss Helen Gordon, William King and Oliver Priestley, from Northern Ireland; and Miss Wendy Spurgeon, Miss Gwlithyn Joseph, Robert Lunnon and Peter D. Smith, from England. In addition, four young people represented the Junior Farmers' Association of Ontario at the Tri-State Conference held at Pocono Manor, Pa., in April, and the RYUSA Conference held at Madison, Wisconsin, in September. These delegates were respectively: Miss Helen Johnston, Huron County; Miss Evelyn Thomas, Peel County; Robert Burkitt, Hastings County; and Eldon DeKay, Middlesex County; and Miss Mary Ellen Greenwood, Brant County; Miss Helen MacDougall, Lambton County; Archie Davidson, Peterborough County; and Ross Bateman, Hastings County. John Benham, Wellington County, attended the Annual Meeting of the American Institute of Co-operation, at Raleigh, North Carolina, the latter part of July and early August.

#### Interprovincial Exchange Visits

Two Junior Farmers from the Province of Manitoba, Keith Leask and Bill Ransom, visited in Ontario for three weeks in June.

Miss Josephine Bird, Haldimand County, and Russell McAllister, Carleton County, represented the Provincial Association at Farm Young People's Week in Edmonton, Alberta.

Miss Jean Peterson, Halton County, Miss Hazel White, Northumberland County, Glen Corneil, Victoria County, and Elliott Snyder, Peel County, spent a week in the Province of Prince Edward Island, visiting Junior Farmer clubs there.

Miss Lorna Hillyard, Peel County, and Allen Scott, Oxford County, attended Camp Laquemac in August, 1956.

#### Provincial Leadership Training Camp

Educational opportunities are provided annually for Junior Farmers by the Ontario Department of Agriculture in co-operation with the Provincial Association. During the year the tenth Provincial Leadership Training Camp was held at Geneva Park, Lake Couchiching, at which 60 Junior Farmers attended.

#### Soils and Land Use Tour

A three-day Junior Farmer Soils and Land Use Tour for one boy from each county and district was organized. The tour visited practical farms in Peel, Halton and York counties, and there were 26 delegates on the tour.

#### Affiliations

The Association is affiliated with and nominates representatives to other farm organizations and associations in Ontario. These are: Federated Women's Institutes of Ontario—Eileen Weeden, Chatsworth, and Jean Bennett, Bronte. Alternate—Helen MacDougall, Alvinston.

Ontario Federation of Agriculture—Mac Sprowl, R.R. #4, Acton (Director on Board of Governors); George Barrie, R.R. #7, Galt; Jim Montgomery, Shelburne; Bob Schenk, R.R. #2, Ayton; Jack Cockburn, Drumbo; Kenneth Ferguson, R.R. #7, Alvinston.

Ontario Conservation Council—Jack Cockburn, Drumbo; Carl Boynton, Woodbridge.

Ontario Plowmen's Association—Ross Sibbick, R.R. #2, Burford; Jack Pearson, R.R. #2, Uxbridge.

Canadian National Exhibition—Glen Corneil, R.R. #3, Omemee.

Royal Agricultural Winter Fair—Bev Gray, R.R. #1, Port Hope; Elliott Snyder, R.R. #1, Brampton.

Provincial Rural Leadership Forum Committee—Carl Boynton, Woodbridge.

## OFFICE STATISTICS

### 55 Agricultural Representatives' Offices

	<i>Total</i>	<i>Average Per Office</i>
No. Letters Received .....	152,168	2,766
No. Letters Written .....	113,257	2,059
No. Circular Letters Mailed .....	760,233	13,822
No. Incoming Telephone Calls .....	126,078	2,292
No. Visitors at Office .....	121,460	2,208
No. Meetings held in Office .....	4,633	84
No. Bulletins and Reports Distributed .....	160,671	2,921
No. Kodachrome Pictures taken .....	3,610	65
No. Meetings Attended by Agricultural Representatives .....	6,204	113
No. Meetings Attended by Associate and Assistant Agricultural Representatives .....	4,173	76
No. Miles travelled by Car on Government business by Agricultural Representatives .....	780,427	14,190
No. Miles travelled by Car on Government business by Associate and Assistant Agricultural Representatives .....	581,154	10,565



## HOME ECONOMICS SERVICE

The objectives of Home Economics Service are (1) to bring to the rural women and girls of Ontario a programme of practical home economics education which they also apply directly in their responsibilities as homemakers and (2) to help them to help themselves and to develop their own leadership. In addition to the field service with home economics specialists giving courses in local communities, this year training schools for local leaders are being introduced. At these schools leaders, appointed by women's institutes or other local groups, will take instruction from specialists in Food and Nutrition, Clothing, Home Furnishing, Homecrafts and Health Education, and the local leaders will relay this instruction to the women of their organizations. A training school will be held in each county and district of the province and will be organized by the County or District Home Economist. It is felt that through this leader training plan a great many more women can be reached and that the whole scope of education in developing resourcefulness and leadership among the people can be extended.

### Staff

The staff consists of 46 full time and 15 part time members. These include the Director, six Home Economics Supervisors (in Clothing, three in Junior Extension, in Home Crafts and in Nutrition), four Home Economists in Nutrition, two in Clothing, three Field Assistants in Millinery, one in Home Crafts, three in Loan Library work, one in Home Furnishings, one in Administrative Leadership, one Field Assistant in Health, Nineteen County and District Home Economists and five office staff. As well as the above, six were employed to do Women's Institute Procedures and Cultural Activities, one to do part time Home Crafts and eight were employed to do part time Junior Extension work.

The following appointments were made:

Miss Barbara Bull, County Home Economist.  
Miss Shirley Bullock, County Home Economist.  
Miss Barbara Clark, County Home Economist.  
Miss A. Robinson Fletcher, County Home Economist.  
Miss Charlotte Grierson, County Home Economist.  
Miss Frances Hucks, Supervisor, Foods and Nutrition.  
Miss Sandra Thibaudeau, County Home Economist.

The following resignation was received:

Mrs. Ina Bell, County Home Economist.

### Courses and Conferences

Courses ranging in length from one to five days and, in the case of the Home Craft Work Shop, ten days, were given by the field staff. The classes were mostly organized by the local Women's Institutes but were open to all the women of the community. The courses dealt with Food and Nutrition, Clothing and Textiles, Home Furnishings, Home Crafts, Health Education, Cultural Activities and Women's Institute Procedures. The accompanying tabulated summary gives the subjects of the courses in each of these sections, the number of courses and the attendance.

<i>Subject</i>	<i>Number of Courses</i>	<i>Enrolment</i>	<i>Average Attendance</i>	<i>Number of Districts Served</i>
Choosing and Using Fabrics .....	29	450	16	17
Household Linens .....	7	118	17	7
Something to Wear .....	18	405	23	16
Fix and Fit .....	11	134	12	10
Lingerie .....	—	—	—	—
Children's Clothing .....	3	33	11	3
Dressmaking I .....	15	169	11	15
Dressmaking II .....	2	24	12	2
Millinery .....	90	1,210	13	50
Let's Cook it Right .....	3	104	23	3
Food for the Family .....	2	82	34	2
Hospitality Foods .....	28	955	25	23
Salads .....	68	2,329	34	56
Sandwiches for All Occasions .....	100	3,696	37	59
Your Food and Your Figure .....	19	391	20	17
Make the Most of your Home Freezer .....	11	241	20	9
Canning Ontario's Food .....	7	141	20	7
An Ounce of Prevention .....	4	116	14	4
Hints for the Home Nurse .....	13	418	16	13
Home Care to the Sick .....	3	128	16	3
Medicine — Yesterday and Today .....	6	133	22	6
You and Your Family's Health .....	12	240	20	12
Workshop .....	7	192	9	6
Rug Making .....	11	130	10	11
Needlecraft-Colour, Design and Stitches .....	4	45	9	4
Treasures in Your Attic .....	16	471	30	15
Brighten Your Home with Colour .....	42	929	23	38
Tailored Slip Covers .....	4	132	8	4
Curtains and Draperies .....	3	82	10	4
Cultural Activities, Featuring Litera- ture, Drama, Nature .....	5	98	20	5
Cultural Activities, Featuring Art, Music, Entertainment .....	15	287	20	15
Programme Planning .....	20	336	19	19
What Makes a Good Officer .....	7	140	20	7
How to Conduct Meetings .....	6	94	16	6
Aids to Effective Speaking .....	27	540	20	22
	618	14,993		490

### Miscellaneous Meetings

Special addresses and demonstrations have been given in co-operation with the Agricultural Representatives and various branches of the Department of Agriculture such as Field Crops, the Dairy Branch, Agricultural Societies.

Staff members assisted with Judges' Forums at Guelph and Kemptville and gave special talks and demonstrations at Women's Institute Conventions, Conferences and Holidays.

A number of radio addresses have been given on Home Economics subjects and releases have been prepared for the press and radio. Both County Home Economists and Specialists on the staff have taken part in television programmes. A representative from Home Economics Service spoke at each of the 109 District Annual Meetings of the Women's Institutes of the Province.

### Circulars and Bulletins

Bulletins issued by this Branch are in great demand not only by Women's Institute members and others who get them from the office of the Agricultural Representatives, but a great many requests from High School teachers and Medical Health Officers are received.

### Home and Country

A Summer issue and a Fall issue of the Women's Institute paper "Home and Country" were published this year. Each issue ran to 47,000 copies and the Institutes distributed these to the members. The purpose of this publication is to encourage good programmes and policies in the Institutes by publishing the best news from the branches; also to keep before the Institutes the Home Economics Services available from the Branch. As the paper goes to every Branch member, it provides a means of sending out good home economics information. A number of copies go to key people in other provinces.

### Mimeographing

Material to be used in courses and 4-H Homemaking Club work was mimeographed in the office as follows: Administration 123,755; Clothing 13,129; Home Crafts 1,200; Housing 530; Loan Library 800; Nutrition 6,716; 4-H Homemaking Clubs 58,845.

### The Loan Library

The Loan Library is a mailing service providing source material for the programmes of Women's Institutes or other organizations. It also helps women with homemaking problems. The loan material is sent upon request in the form of mounted bulletins, papers, clippings and study kits.

During the past year 17,046 folders were sent out on loan for a period of two weeks. The following classification indicates the interests: Agriculture and Canadian Industries 2,017; Citizenship and Education 2,458; Community Activities and Public Relations 1,570; Historical Research and Current Events 1,110; Home Economics and Health 2,982; Women's Institutes 1,373; Resolutions 145. Articles on inspirational subjects, biographies, other countries, games and contests, totalling 3,315, were sent. Letters accompanied the 2,076 requests for loan literature.

Loan Library Study Kits are designed for those Institutes or individuals who desire longer loan periods for extensive study. Nine subjects relating to culture, crafts and homemaking are available. Last year 205 Study Kits with accompanying letters were mailed. The distribution was as follows: Kitchen Improvement 23, Simplified Housekeeping 20, Furniture Refinishing 17, Felt Work 51, Etched Aluminum 65, Canadian Art and Artists 14, Conservation 2, Canadian Women 3, Associated Country Women of the World 10.

Letter friend contacts were completed between 20 Ontario women and women in Australia, England, Scotland, Ireland and New Zealand.

Friendship links were completed between Ontario Institutes and 4 Institutes in Australia, 7 in England and 9 in New Zealand.

Twenty-six requests for information on Historical Records of the organization of branch Institutes were answered.



Books sent as a gift from English Institutes are still in demand. Thirty-five circulated last year.

Files are kept up-to-date by addition of new material and mending and discarding old material.

Staff members use the Loan Library for source material and have access to a wide selection of magazines.

## EXTENSION WORK WITH JUNIORS

### 4-H Homemaking Clubs

The 4-H Homemaking Club Programme for girls and young women, twelve to twenty-six years of age, is planned to give training in home economics, to provide an opportunity for continuous growth and development through participation in educational programmes, to encourage satisfaction in achievement and an appreciation of rural living, to develop leaders and to promote intelligent, responsible citizenship.

The eighteen County and District Home Economists and two part-time Home Economists direct the Homemaking Club Programme in their respective territories. They conduct local leader training schools, visit clubs, hold achievement days and assume responsibility for special club programmes at fairs, conventions and conferences. Over 1,600 local leaders and assistant leaders attended two-day training schools, or one day for gardens, and led the clubs with their eight club meetings, or four for gardens. Each County and District selected its club programme from the seventeen available clubs — five in foods, five in clothing, two in house furnishings, one in hospitality, one in home defense and three in gardens. Every County and District, with the exception of three counties which did not have a Home Economist, carried on two club units during the club year. Records show an all-time high membership with a gratifying standard of work. Reports indicate that interest of senior club members was maintained in spite of busy school days and girls leaving home for further studies and work. Frequently meetings were held at week-ends when girls were home or they joined clubs in other centres where they were working. Here and there young mothers of club age continued their membership since they find club experience assists them in meeting family needs. 4-H Homemaking Clubs are encouraged to confine their club activities to club meetings, a visit to the local Institute and participation in Class A and B Fair programmes for senior members. This seems wise since both leaders and members, who are mainly students at school, have many demands on their time and other opportunities for various social affairs. Some counties sponsor one educational trip a year, during Easter or Summer holidays.

<i>Units</i>	<i>Training Schools for Leaders</i>	<i>Number of Clubs</i>	<i>Number of Members</i>
Food and Nutrition Club .....	30	306	3,094
Clothing Clubs .....	49	421	4,005
Housefurnishing Clubs .....	12	88	787
Hospitality Clubs .....	6	48	471
4-H Home Garden Clubs .....	26	147	1,117
Home Defense Clubs .....	7	78	767
Totals .....	<u>130</u>	<u>1,088</u>	<u>10,241</u>

### Local Leaders Recognized

Arrangements were made and programmes planned for experienced local leaders of 4-H Homemaking Clubs to visit the Royal Winter Fair, guests of the Ontario

Department of Agriculture. While over 400 leaders were eligible, having led two clubs during 1955 and 1956 and not having had two previous trips, only 194 were able to take advantage of this trip.

Luncheons were arranged for one day of the training school for 1,475 leaders.

### Juniors at Fairs

Some 450 club members took part in the 4-H Homemaking Club programme at Central Canada and Canadian National Exhibitions, Western, Peterborough, Galt and Simcoe Fairs. There were 14 inter-county demonstrations given and 54 inter-county club exhibits placed. At Central Canada, members live in club camps and follow a two-day programme. At the Canadian National Exhibition, members have a three-day programme and are given accommodation for two nights at a University Women's Residence.

Suitable living accommodation, an auditorium for club programme of judging, demonstrations and exhibits, and a well-planned programme for members, make these inter-county days, held before school starts, happy and worthwhile days for senior club members.

At Stratford, Belleville, Owen Sound and Teeswater similar one day programmes were featured with 190 individuals taking part. Programme included 12 inter-club demonstrations and 4-H Inter-club exhibits. 4-H Homemaking Club exhibits were placed at twenty-one Class B Fairs: Ancaster, Aylmer, Barrie, Brampton, Caledonia, Carp, Collingwood, Elmira, Erin, Kingston, Maxville, Metcalfe, Milton, Paris, Renfrew, Richmond, Ridgetown, Rockton, Strathroy, Welland and Woodstock. These exhibits were 4-H Homemaking Club exhibits from County Achievement Days. Some 175 club exhibits in line with this programme were placed at these fairs.

Some 35 educational exhibits were placed by Junior Institutes and Farm Girls' Clubs at Galt, Brampton, Kingston, Markham, Milton and Ridgetown.

Many local fairs had classes for some phase of 4-H Homemaking Club work with individual and club exhibits, and as well special sections for young women, members of Junior Institutes and Junior Farmers. In all cases these classes were arranged in co-operation with County or District Home Economists.

### Pins, Certificates and Spoons

County Honour pins and certificates were presented to 537 members who completed six 4-H Homemaking Club units, and 145 members who completed twelve 4-H Homemaking Club Units received Provincial Honour Certificates and pins.

Leaders' Certificates were presented to 50 leaders on completing 5 years as Local Leader.

A 4-H Homemaking Club sterling silver spoon was designed this year for club members completing work satisfactorily. While these spoons were available for the latter part of the year only, 8,705 leaders and members each received a spoon.

### 4-H Home Garden Clubs

One thousand and eighty-eight gardeners carried on the programme outlined for the 4-H Home Garden Club. These clubs were organized in twenty-one counties and districts, under the supervision of Agricultural Representatives and Home

Economists. Reports indicate over 78% of gardeners completing every phase of the club programme.

### National Week and Provincial Girls' Conference

Five senior members were selected from Carleton, Elgin, Grey, Perth and Peterborough 4-H Homemaking Clubs to represent Ontario at the National Club Week.

The third Provincial Girls' Conference for 4-H Homemaking Club members was held at the Ontario Agricultural College in June. Every county and district was represented by the 192 experienced club members who were selected to attend. The theme of the Conference was "You and Your Home". Travelling expenses to the conference were paid by the Department.

### Junior Institutes

Junior Institutes, Farm Girls' Clubs and rural young women associated with the Junior Farmers' Association continued to co-operate with Women's Institutes and Junior Farmers in planning and carrying on programmes concerned with home and family life, agriculture, community living and citizenship. They gave leadership in sponsoring 4-H Homemaking Clubs and with Junior Farmers held Field Days, Sunday Services, Choral Classes, Debates, Public Speaking, Farm and Home Safety Projects and a Provincial Camp. They attended Junior Farmer Conferences in Toronto, Kemptville, Guelph and five one-day leadership training schools.

Over 80 programme kits were used by various groups in preparing monthly programmes. Some clubs have used film strips on Family Living available from Home Economics Service.

### Scholarships

Experienced club members received various Women's Institute Scholarships which gave them financial assistance for some educational purpose — The Dorothy Fletcher Ontario Women's Institute Scholarship, The Ontario Women's Institute Scholarship and, as well, seven county and district scholarships.

The Canadian National Exhibition Scholarship established during the year was awarded Janet Lane, a Manitoulin Club member, on her enrolment at Macdonald Institute.

### Exchange Visits

Members entertained in their homes, overseas visitors from Scottish Association of Young Farmers' Clubs and the National Federation of Young Farmers' Clubs of England and Wales. Two Juniors, Provincial Honour girls who are active members of Junior Farmers, were included in the party of four Ontario Juniors who visited Great Britain.

Delegates were sent to R.Y.U.S.A. Conference in West Virginia and Tri State Conference of the R.Y.U.S.A. in Pennsylvania, Prince Edward Island and Alberta.

### FEDERATED WOMEN'S INSTITUTES OF ONTARIO

The Extension Branch, Home Economics Service, works closely with the Federated Women's Institutes of Ontario and the Director sits on the Provincial



Board as an honorary member. At the annual meeting of the Federated Women's Institutes of Ontario Provincial Board, Mrs. James Haggerty, Napanee, was elected President and Mrs. G. Gordon Maynard, Unionville, was again elected Secretary.

The Federated Women's Institutes of Ontario held annual conventions in 13 areas of the province last year, with a total attendance of 4,689; an annual Officers' Conference at Guelph attended by nearly 500 women; and Women's Institute Holidays at Guelph and Kemptville. Staff members assisted with the conference and holiday programmes.

The F.W.I.O. had a tent at the International Ploughing Match in Brooklin and a booth at the Royal Agricultural Winter Fair.

### Branches and Membership

Number of Senior Women's Institutes in Ontario, March 31, 1957 .....	1,424
Number of Junior Women's Institutes in Ontario, March 31, 1957 .....	57
Total number of Women's Institutes in Ontario, March 31, 1957 .....	1,481
Membership, March 31, 1957 .....	42,741

Institutes organized during the year — 7

Institutes disbanded during the year — 18

Of the Institutes organized all were Senior Women's Institutes.

Of the Institutes disbanded 12 were Senior and 6 were Junior.

### The newly-organized Institutes were:

Bruce North .....	Stokes Bay
Huron East .....	Walton
Perth South .....	Dublin
Rainy River West .....	Dobie
Simcoe East .....	Victoria Crescent
Wellington South .....	Morrison
York East .....	Glen Elm

### The Institutes which disbanded were:

Algoma Centre .....	Garden River
Algoma East .....	Princess Margaret Junior
Dufferin North .....	Corbetton, Kilgorie
Elgin East .....	Luton
Glengarry .....	Williamstown
Kenora .....	Sioux Lookout
Lambton Centre .....	Enniskillen Junior
Lanark South .....	Rosedale
Middlesex North .....	Ilderton Junior
Muskoka South .....	Draper Macaulay
Oxford North .....	East Missouri Junior
Parry Sound South .....	Hemacville
Peel South .....	Port Credit, Tullamore Junior
Renfrew North .....	Roche Fondue
Welland .....	Burnaby
Wellington North .....	Erin Township Junior

### Legislative Grants

To districts \$4,139.00, to convention areas \$755.00: Total \$4,894.00.

## THE FRUIT AND VEGETABLE EXTENSION SERVICE

The Fruit and Vegetable Extension Service continued to give assistance and expand its services to fruit and vegetable growers during 1956-57. The staff of Extension Specialists, formerly designated as Fieldmen, are located in most of the important fruit and vegetable growing areas of the Province and provide specialized and technical assistance to those engaged in the production of the various commodities. The work is directed from the Extension Services Building, Vineland Station, Ontario.

### General Crop Conditions

#### Fruits

The winter of 1956 was not such as to cause any appreciable injury to tree fruits, although in the Niagara Peninsula some peach and sour cherry trees on poorly drained soils had to be removed.

The 1956 growing season was characterized by below normal temperatures and excessive precipitation. The cool weather in the spring retarded the development of all fruit trees and this, along with several frosts during blossom time, resulted in a reduced set of fruit.

Strawberries were frosted quite severely in the Norfolk and Niagara areas. By middle May the stage of development was two to three weeks later than the previous year. A surge of very warm weather for the first two weeks in June stimulated all crops but this did not compensate for the delaying influence of the earlier cold weather and excessive rain. The inclement weather continued until late September and this resulted in all fruits, except raspberries, being reduced in quantity and quality. Fine weather in October improved the size and colour of late varieties of apples.

Fruit growers, generally, had little difficulty in keeping insect pests under control, except that plum curculio in apples was more prevalent than in former years. Also, apple maggot caused somewhat more injury than during the previous year. This is usual when there is a light crop of apples.

In spite of prolonged rains, apple scab was kept reasonably well under control and the apple crop was generally clean. Growers of stone fruits had major difficulties in keeping brown rot in check.

The reduced fruit crop did not create any major marketing difficulties. Prices received by growers were slightly in excess of the previous year in most cases. The net income per farm unit, however, was lower because of the reduced crop.

The marketing period for McIntosh apples has been greatly extended with the construction during the year of several controlled atmosphere storage rooms in cold storages in the main apple growing areas of the Province. Approximately 100,000 bushels of McIntosh apples were placed in these specially constructed storage rooms last fall. These rooms hold about 10,000 bushels each, are sealed air-tight, and the oxygen and carbon dioxide gas is maintained at 3% and 5% respectively, along with a constant temperature of 36°F. These conditions slow down the rate of respiration of the fruit, so that when the rooms are opened in late March or later, fruit of superior quality to that in ordinary cold storage is available to the consumer for a longer period of the year.

#### Vegetables

The generally cool weather accompanied by excessive rain had extensive and direct effects on all vegetable crops. Frosts in the early period delayed planting and

caused cabbage, cauliflower and celery to "bolt", thus making for a reduced yield per acre. Most marsh crops suffered because of weather and this made for considerable difficulty in controlling diseases which thrive under a damp, cool environment. Highland vegetable crops benefited to some extent by the weather but were very susceptible to diseases. The fresh and processing tomato crop was most disappointing. Quantity and quality were greatly reduced because of the weather. Processors had difficulty in packing high colour products. Many tons of tomatoes were imported from districts where better weather had prevailed. The late potato crop was harvested and stored in good weather. Late blight and hollow heart reduced the quality to some extent.

Prices received by vegetable growers for their market produce was disappointing throughout the whole growing and storage seasons. Prices paid by processors for several crops were slightly lower than the previous year and with the reduced yields, the net income to the grower was also reduced.

### The Orchard Spray Service

The Orchard Spray Service is designed to give advice to growers by a circular letter sent from Extension Specialists' offices on the proper methods to control pests which may affect particular fruit crops. These circulars endeavour to assist the grower in producing a high quality product. During the year Extension Specialists forwarded a total of 81,591 Spray Service Circulars with an average of 12 letters going to each grower.

### Tree Fruit Census

During the year a Tree Fruit Census got underway. Fruit and Vegetable Extension Specialist and Agricultural Representatives forwarded census forms to fruit growers who were asked to record the ages and varieties of fruits on their farms. The census will be completed in 1957 and results published.

### Demonstrational Work in Fruits and Vegetables

Extension Specialists continue to use the results of research by setting up demonstrational projects on fruit and vegetable growers' farms. During the year a total of 22 projects were set up and growers were able to assess the results of improved practices. Specifically, the projects included variety trials, fertilizers, pruning, soil fumigation, disease and insect control, weed control and foliar application of certain fertilizers. The Fruit and Vegetable Extension Service appreciates the co-operation rendered by fruit and vegetable growers in the time, effort and use of land involved in carrying out the various projects.

### Research Work in Fruits and Vegetables

Research on many fruit and vegetable problems require work being carried on under field conditions. The Extension Specialists co-operate with those in research in testing various theories in answer to the problems. During the year a total of 30 continuing and new research projects were underway. While the research projects covered a wide range of important problems, two are of particular interest.

(1) *Leaf Analysis* — It is possible to determine the fertilizer requirements for fruit trees by analyzing the foliage. This method has certain advantages over the soil test.



The Horticultural Experiment Station is now endeavouring to set up levels for fertilizer requirements by leaf analysis and this requires that foliage from many orchards in Ontario be tested. Extension Specialists have co-operated in this project and during the year leaf samples from 111 orchards were taken. It is hoped that eventually a Leaf Analysis Service will be in operation so that accurate recommendations can be made with regard to fertilizer requirements for fruit trees.

(2) *Rabbit Repellents* — The European Hare, since it was imported to Ontario in 1912 from Germany, has caused extensive damage to young fruit trees. Mr. J. A. Goldie, Extension Specialist for the Georgian Bay area, has, for five years, carried on an extensive research project with the European Hare in captivity to determine if there are materials which may be applied to young fruit trees which would repel the rabbit from eating the bark. Mr. Goldie not only tested the repellent value of many materials but also tested their phytotoxicity or possible injury to fruit trees.

## EXTENSION WORK IN THE MARKETING OF FRUITS AND VEGETABLES

Fruit and vegetable growers, both collectively and individually, are each year taking a greater interest in the marketing of their commodities. Extension Specialists give assistance by promoting proper packing, better packaging and endeavouring to increase the sale of produce. Each year problems concerning storage of fruit and vegetables require the attention of the Specialists who endeavour to give assistance or call in experts. There is an increasing interest by fruit and vegetable growers in the construction and operation of farm storages and the Specialists give help by way of advice.

### 4-H Club Work

Assistance is given to the Agricultural Representatives in the organization of Potato and Grape Clubs. The club leaders rely on the Specialists to give technical advice, inspect the members' plots, arrange field tours and take part in Achievement Days. Of particular interest is the fact that there are 5 Grape Clubs in the Niagara Peninsula with each member carrying out a project using the most up-to-date cultural practices.

### Press, Radio and Television

The co-operation of local weekly and daily newspapers is appreciated as they provide a medium by which Extension Specialists are able to give information on improved cultural practices, meetings, etc. During the year Specialists prepared 73 press releases.

Radio stations in areas where Extension Specialists are located provide much free time for the Specialist's use. Broadcasts are on a daily and weekly basis. The daily broadcasts usually are of the early morning type and provide growers with information which is pertinent for particular crops. Extension Specialists made 279 broadcasts during the year.

With the increased number of farm homes having television receivers, the Extension Specialists are making more use of this new medium of extension. The programmes, for the most part, are prepared for the interest of both rural and urban audiences. Extension Specialists participated in various parts of the Province during the year.

## Office Statistics

*Fruit and Vegetable Extension Specialists — (8 offices)*

	Total	Average Per Office
(a) No. Letters Received .....	4,993	624
(b) No. Letters Written .....	3,029	379
(c) No. Circulars Mailed .....	27,040	4,380
(d) No. Incoming Telephone Calls .....	5,152	644
(e) No. Visitors at Office .....	2,315	289
(f) No. Meetings Held in Office .....	112	14
(g) No. Bulletins and Reports Distributed .....	19,172	2,396
(h) No. Kodachrome Pictures Taken .....	366	44
(i) No. Meetings Attended by Specialists .....	294	37
(j) No. Miles travelled by Specialists on Government business .....	106,672	13,334
(k) No. Miles travelled by Assistant Specialist—Government business .....	9,500	9,500

## TOBACCO EXTENSION

In May, 1955, two graduates of the Ontario Agricultural College were appointed to the staff of the Extension Branch to actively assist those engaged in the production of tobacco. Through the co-operation of the Canada Department of Agriculture, the men were located at the Tobacco Substation at Delhi. A training programme was set up in order that the men might become thoroughly familiar with the culture of this very specialized crop. During the year the Tobacco Extension Specialists gave increased assistance to tobacco growers by way of advice, demonstration plots, press releases, radio and educational meetings.

## Crop Conditions

Weather conditions during the 1956 growing season were exceptionally cool and wet. Various leaf diseases and disorders developed, and under these conditions many growers suffered considerable loss from leaf damage in the field. Most crops were thin and lacking in body because of the excess moisture accompanied by cool temperatures. Hail damage in August in scattered areas caused an estimated loss of two million pounds. Frost injury on September 21 to that not harvested amounted to roughly two million pounds. In general, tobacco cured out bright and flashy, and because of its thinness and high moisture content, was difficult to cure and a fairly high proportion went dead during the curing process. Despite these losses, the average yield is estimated at 1,336 pounds per acre, which is a substantial increase over the 1,222 pounds produced in 1955.

## Office Statistics

*Tobacco Extension Specialists*

(a) No. Letters Received .....	900
(b) No. Letters Written .....	500
(c) No. Circular Letters Mailed .....	5,000
(d) No. Incoming Telephone Calls .....	260
(e) No. Visitors at Office .....	960
(f) No. Meetings held in Office .....	0
(g) No. Bulletins and Reports Distributed .....	200
(h) No. Kodachrome Pictures taken .....	120
(i) No. Meetings attended .....	16
(j) No. Miles travelled by Extension Specialists on Government business .....	18,112
(k) No. Miles travelled by Assistant Extension Specialists on Government business .....	0

## AGRICULTURAL ENGINEERING EXTENSION SERVICES

During the past two years, the agricultural engineering extension services west of Hastings County have gradually been transferred to the Extension Branch. The transfer was completed when Professor F. Ferguson retired on August 11, 1956.

### Correspondence and Visitors

All general correspondence mailed to the Agricultural Engineering Department at the College is now channelled to Mr. H. E. Wright in the office there. The requests cover all phases in the engineering field and range from requests for building plans to other problems such as water supply, building materials and design, paints, and irrigation.

Approximately 800 letters in reply to enquiries were forwarded in the 1956-57 fiscal year, with an additional 350 plans forwarded. These were in addition to the circulars, bulletins, and plans from the Canadian Farm Building Planning Service, forwarded from the Distribution Division of the Public Relations Department. The Agricultural Engineering personnel also had 60 farmers call at their office and answered innumerable telephone calls.

### Drainage

Twice the 1955-56 acreage was surveyed in 1956-57. This improvement in efficiency was due to new techniques developed by the field staff and the adoption of the stadia survey method. Notwithstanding this improvement in effective operation, the number of applications on file is the same as of April 1, 1956. The trend to a greater interest in tile drainage is apparent throughout the Province. During the year a number of townships were added to the list of those having previously passed the by-law allowing money to be borrowed under the Tile Drainage Act. The Agricultural Engineering Extension Specialist gave assistance to township councils in explaining the act and the procedures necessary.

### Farm Ponds

Interest in farm pond construction has declined, but there is still considerable service demanded in this field. Plastic pond liners are stimulating interest in the sandy tobacco areas, while in some sections water is obtained from a battery of sand points. An occasional large dam required considerable time in its design.

### Bulk Milk Handling

Professor F. Theakston of the Engineering Department at the Ontario Agricultural College has designed plans for bulk milk houses, and several hundred have been forwarded to dairy farmers. These plans have facilitated the work of the Extension Specialist, but a considerable amount of personal service is still required in the areas where a changeover is in progress. This work will, no doubt, increase during the next several years.

### Buildings

Farmers are continuing to increase their herds of dairy and beef cattle. Ventilation problems, building and stable remodelling enquiries have multiplied because of this development. Many of the barns built years ago in Ontario are now obsolete



and must shortly be replaced. Pole and rigid frame methods of construction are being used.

There has been an increase in enquiries for plans of self-feeding mangers, hay racks, and trough design. A number of Extension Specialists have designed plans to meet this need and have made blueprints available through the Service.

There has been a considerable increase in poultry ventilation problems because of large scale operations with broilers and laying hens. Pole and rigid frame construction are being used extensively by poultry men. Slag and cinder block construction are also being used.

### Blueprinting Service

A blueprinting service was operated during the year with 14,500 prints being made in the last eight months of the 1956-57 fiscal year. Of these, 6,500 were for the use of the Agricultural Engineering Service and the Ontario Agricultural College Departments. The work will be reduced by one-half since the commercial service was terminated as of May 1st.

### 4-H Club Work

The 4-H Tractor Maintenance Clubs appear to have levelled out at approximately 40 clubs annually. Because of pressure of other work during the past two years, club members were not visited. Plans are being made to visit all members during the summer of 1957.

Because the work in the Agricultural Engineering field is rapidly increasing, it appears that a larger staff will soon be required to give adequate service.

### Summary of Extension Services

#### *Drainage:*

Total calls .....	1,036
Number of acres systematically surveyed .....	23,185
Number of feet of profile surveyed .....	181,485
Number of feet of open ditch surveyed .....	31,300
Number of preliminary surveys .....	262
Number of advisory calls .....	254
Number of inspections .....	113
Number of applications on file .....	782

#### *Other Services:*

Number of Drainage Field Days .....	35
Number of Ditches dynamited (in feet) .....	4,000
Number of Inspections re Dams .....	68
Number of Farm Pond Surveys .....	141
Number of Building Inspections .....	432
Number of Ventilation Systems .....	155

Though approximately double the 1955-56 acreage was surveyed in 1956-57, the number of applications on file is approximately the same as on April 1, 1956. This indicates farmers' developing awareness of the value of this tool in increasing crop production.

While some new machines are now in operation, there is still a backlog of drainage work to be completed, many farmers having their tile installation postponed to the coming season.

A total of \$664,600.00 was borrowed by the township under the Tile Drainage Act. This is an increase of \$129,400.00 over the amount borrowed in 1955-56.

#### 4-H Tractor Maintenance Clubs

Thirty-two clubs were organized with a membership of 464. Five meetings and an Achievement Day were conducted with each club. The Inter-Provincial competition was held at the Ontario Agricultural College on October 19, 1956, comprising teams of the two best members in each club. This competition included the clubs instructed by the Fieldmen of the Kemptville Agricultural School.

#### Junior Farmer Mechanics Clubs

Interest in this club has dropped quite considerably, with only 10 clubs and a membership of 160. This method of Junior Farmer instruction does not appear to meet the need and may best be met by talks to the regular Junior Farmer Clubs.

#### Extension Talks

Approximately 100 farm group meetings were addressed by the Agricultural Engineering Extension Specialists during the year, in addition to 4-H and Junior Farmer Club work. A considerable number of other meetings were attended and assistance given. Several farm Radio and T.V. programmes were organized and numerous press releases prepared.

#### Blueprinting Service

Agricultural Engineering Specialist Service & Ont. Agricultural College .....	6,464
Prints made for local commercial firms .....	8,112

### PERSONNEL CHANGES AND APPOINTMENTS

April 1, 1956 — March 31, 1957

*Agricultural Representatives* — Total number as of March 31, 1957 — 54.

#### RETIREMENTS ON SUPERANNUATION:

W. P. MACDONALD, Agricultural Representative for Lambton County from May 1916—May 31, 1956;

H. W. GRAHAM, Agricultural Representative for Dundas County from October 1934 — July 31, 1956;

#### RESIGNATIONS:

R. R. CROZIER, Agricultural Representative, Stormont County, December 31, 1956;

G. W. MONTGOMERY, Agricultural Representative, Huron County, February 28, 1957;

#### PROMOTIONS:

J. A. MACDONALD, from Associate Agricultural Representative, Lambton County, to Agricultural Representative, Lambton County, June 1, 1956;

D. M. RUTHERFORD, from Associate Agricultural Representative, Dundas County, to Agricultural Representative, Dundas County, August 1, 1956;

K. E. BEST, Associate Agricultural Representative, Peterborough County, to Agricultural Representative, Stormont County, January 1, 1957;

D. A. McARTHUR, from Associate Agricultural Representative, Carleton County, to Agricultural Representative, Frontenac County, April 1, 1957.

#### TRANSFER:

D. H. MILES, Agricultural Representative, Frontenac County, to Agricultural Representative, Huron County, April 1, 1957.

*Associate Agricultural Representatives* — Total number as of March 31, 1957 — 11.

#### RESIGNATIONS:

W. F. STONE, Associate Agricultural Representative, Simcoe South, October 24, 1956.

#### PROMOTION:

J. R. RICHARDS, from Assistant Agricultural Representative, to Associate Agricultural Representative, Norfolk County, April 1, 1956.

*Assistant Agricultural Representatives* — Total number as of March 31, 1957 — 15.

#### RESIGNATIONS:

G. D. TROTIER, Assistant Agricultural Representative, Cochrane West, August 15, 1956;

J. E. DUFFIN, Assistant Agricultural Representative, Elgin County, March 31, 1957;

M. G. FREEMAN, Assistant Agricultural Representative, Victoria County, March 31, 1957;

W. M. KELL, Assistant Agricultural Representative, Simcoe North, March 31, 1957;

G. C. CLARK, Assistant Agricultural Representative, Elgin County, who has been on Leave of Absence since Sept. 23rd, 1955, resigned in August, 1956.

#### NEW APPOINTMENTS:

CHARLES TANNER, appointed as Assistant Agricultural Representative, Middlesex County, May 7, 1956;

J. R. MacGREGOR, appointed as Assistant Agricultural Representative, Lambton County, October 1, 1956;

W. A. McBRIDE, Assistant Agricultural Representative, Bruce County, December 3, 1956.

#### TRANSFER:

W. J. I. McALLISTER, transferred from Farm Economics Branch to Assistant Agricultural Representative, Kent County, April 13, 1956.

*Fieldmen, Agricultural Engineering Service* — Total number as of March 31, 1957 — 11.

#### NEW APPOINTMENTS:

K. E. WOOD, appointed Agricultural Engineering Fieldman, Ridgetown, May 1, 1956;



## TRANSFERS:

J. R. OGILVIE, Agricultural Engineering Fieldman, transferred from Guelph to Newmarket, April 1, 1956;

R. J. MILNE, Agricultural Engineering Fieldman, transferred from Guelph to Woodstock, April 1, 1956.

*Fieldmen, Fruit & Vegetable Extension Service* — Total number as of March 31, 1957 — 10.

## NEW APPOINTMENTS:

E. F. MUIR, appointed Fieldman, Fruit and Vegetable Extension, May 1, 1956, at Oakville;

G. H. COMLY, appointed Fieldman, Fruit and Vegetable Extension, September 17, 1956, at Vineland Station.

*Fieldmen, Fruit and Vegetable Extension Service.*

## TRANSFER:

C. C. FILMAN, from Assistant Professor, Department of Horticulture, Ontario Agricultural College, Guelph, to Extension Specialist, Fruit and Vegetable Extension Service, at Newmarket, March 1, 1957.

*Tobacco Extension Service* — Total number as of March 31, 1957 — 1.

## RESIGNATION:

E. W. PRESANT, Fieldman, Tobacco Extension Service, Delhi, November 15, 1956.  
*Employees on Leave of Absence* — H. R. BAKER, G. W. EATON, N. O. WATSON.

## HEAD OFFICE STAFF

## PROMOTION:

J. A. GARNER, from Director, Extension Branch, to Chief Agricultural Officer, Ontario Department of Agriculture, December 1, 1956;

T. R. HILLIARD, from Associate Director to Director of Extension Branch, December 1, 1956;

R. G. BENNETT, from Associate Director to Associate Director of Extension, December 1, 1956;

A. G. BENNETT, from Associate Agricultural Representative, Halton and Peel Counties, to Assistant Director, January 1, 1957.

## TRANSFER:

W. A. MONTCALM, from Associate Director, Co-operation and Markets Branch, to Associate Director, Extension Branch, January 1, 1957.

## *Co-operation and Markets Branch*

The activities of the Branch are devoted to administering The Farm Products Marketing Act under the jurisdiction of The Farm Products Marketing Board and The Farm Products Containers Act. In addition the Commissioner of Marketing is Chairman of the Ontario Food Terminal Board administering the Ontario Food Terminal Act and is a Member of the Milk Products Board administering The Milk Industry Act.

### THE FARM PRODUCTS MARKETING BOARD

The functions of the Board are to receive requests from groups of producers seeking the approval of marketing schemes under the provisions of The Farm Products Marketing Act, to consider any such schemes and make recommendations thereon to the Minister as to their approval or otherwise and the taking of a vote amongst the producers of the product or products to be regulated before they are approved, to conduct the vote and to exercise general supervision over any producer marketing board established to administer a scheme approved under the Act.

As reviewed in the Board's last annual report, which summarized the events leading up to the action, the highlight of the year was the reference to the Supreme Court of Canada respecting the validity of the Ontario Farm Products Marketing Act. The hearing was held by the Court during April 24th to 26th, 1956. The questions submitted in the reference were intended to test the validity of all of the Ontario farm marketing legislation and, in addition, to give an answer to the validity of other legislation frequently discussed by farm marketing associations of levying a licence fee for the purpose of equalizing or adjusting returns to producers. The main points, however, were the validity of licence fees levied on producers in proportion to the quantity of produce marketed, collected by dealers or processors from producers' returns and paid over to the producers' organization and the validity of service charges imposed in the same manner but collected by marketing agencies from producers. The Ontario Farm Products Marketing Act was, by amendment in 1956, assumed to apply only in the case of intra-provincial transactions. The questions submitted in the reference respecting regulations under the Act were based on this assumption by inference. The Supreme Court of Canada resumed sittings on the reference on November 19th and 20th, 1956, to hear further argument mainly on the inter-provincial aspect of farm marketing. On January 22nd, 1957, the Supreme Court of Canada handed down its judgment.

From the Reasons for Judgment it is evident that the majority of the Justices were of the opinion that the provisions of the Ontario Farm Products Marketing Act with respect to the pooling of the returns to producers from the sale of the product and to the imposition of licence fees and service charges were valid provisions so long as they applied to a farm product or to the finished product processed from the farm product that did not enter into inter-provincial or export trade. The Court, however, was unanimous in holding that a proposed amendment to the Ontario Farm Products Marketing Act to provide for equalizing or adjusting the returns to producers through imposing licence fees, levies or charges, would be *ultra vires* any Provincial Legislature.

While the decision was a major step forward in several respects, in one regard

it was a highly qualified judgment. The decision rules that not only the marketing of the raw product but also the consumption of the finished product, if any, made from the raw product must take place within the Province in order for the Provincial law to be valid. But upon certification of a Provincial marketing scheme under the Agricultural Products Marketing Act (Canada), however, like powers of regulation and control over the marketing of the farm product granted intra-provincially by the Province can be extended into the inter-provincial and export field by the Federal Government. The Supreme Court of Canada found the Agricultural Products Marketing Act (Canada) valid legislation in the *Willis v. P.E.I. Potato Marketing Board* case in 1952. Nevertheless, the 1957 judgment of the Supreme Court of Canada placed upon the prosecution in any action under either statute an impossible onus of proving:

- (a) in a prosecution under a Provincial Act that the product is for consumption locally within the Province, and
- (b) in a prosecution under the Federal Act that the product is for inter-provincial or export trade.

In these circumstances the Ontario law officers felt that it was necessary for both the Ontario Farm Products Marketing Act and the Canada Agricultural Products Marketing Act to contain sections placing the onus upon the accused rather than the accuser, of proving in any action, that a product is not a regulated product within the meaning of the Act. The Ontario Farm Products Marketing Act was amended during the 1957 session of the Ontario Legislature on this point by the addition of the following provision:

"In any action or prosecution the onus shall be upon the defendant or the accused to prove that the product is not a regulated product within the meaning of this Act."

The Government of Ontario requested the Government of Canada to amend its Agricultural Products Marketing Act in the same manner.

A buyer, processor or shipper marketing the product may be able to satisfy the onus where a producer or his marketing agency could not possibly do so. For that reason, in addition to the onus section, the Ontario Farm Products Marketing Act was also amended during the 1957 session of the Ontario Legislature by the addition of the following provision:

"In any prosecution under the Agricultural Products Marketing Act (Canada) the justice may, if he finds that the offence is not proved under that Act but that the evidence establishes an offence of a similar kind in relation to the control or regulation of the marketing of the farm product locally within the Province, convict the accused under this Act notwithstanding that no information has been laid under this Act."

The Government of Ontario also requested the Government of Canada to amend its Agricultural Products Marketing Act in the same manner. Without these amendments to both the Provincial and the Federal farm product marketing acts the Ontario law officers felt a successful prosecution under either Act would be exceedingly difficult and that an onus section alone in both the Acts was not sufficient to assure the proper functioning of the two Acts.

In addition and at the request of both the Canadian and Ontario Federations of Agriculture and of several of the organized Ontario farm groups, particularly in the dairy field, the Government of Ontario requested the Government of Canada to consider favourably an amendment to its Agricultural Products Marketing Act with respect to the marketing of any agricultural product to permit producer marketing



boards to impose and collect levies or charges from producers for the purpose of equalizing or adjusting the returns to producers in respect of marketing in both intra-provincial and inter-provincial and export trade. This relates to the matter in the reference to the Supreme Court of Canada on which the Court was unanimous in holding that the power to equalize returns is not within Provincial legislative jurisdiction.

As well as the above amendments, a general revision of the wording and of the arrangement of the various sections of the Farm Products Marketing Act was made by the Ontario Legislature. One new power and four amendments to existing powers were also added to the Act as follows:

- (1) a new provision whereby producers of a farm product, not under a marketing scheme, may raise money for market research, promotion and advertising of the farm product and for the expense of their association;
- (2) an amendment to limit the licensing provision so that any person who meets the requirements of experience, financial responsibility and proper facilities may obtain a licence;
- (3) an amendment to widen the corporate powers which may be given to a producer marketing board to include all those of a co-operative corporation under Part 5 of The Corporations Act, 1953; and
- (4) an amendment to give producer marketing boards additional powers to inspect the records and premises of persons engaged in the producing and marketing of the regulated product. Such authority, however, is limited to the regulated product and does not include the inspection of records and premises with respect to any finished product processed or manufactured from the regulated product.

During the year under review the growers of flue-cured tobacco petitioned the Board that a vote be taken on a proposed marketing scheme prepared by a Provisional Committee of Growers. The vote sought by the Provisional Committee was brought about in part by a recommendation in a report by the Restrictive Trade Practices Commission of the Canada Department of Justice. This report dealt with the production, purchase and sale of flue-cured tobacco in Ontario and indicated, in the Commission's opinion, that certain features of the operation of the present voluntary Ontario Flue-Cured Tobacco Marketing Association were regarded as discriminatory. The Board approved the application for the vote when the number petitioning substantially exceeded 10% of those estimated to have grown this crop in 1956 and arranged for a vote to be taken on the question on April 1st. Prior to the taking of the vote considerable controversy and misunderstanding arose among the growers as to the issues involved. Constitutional charges on the legality of the proposed marketing scheme were also raised. As a result and following representations by the Provisional Committee, the Board announced the vote would be postponed to permit further study of all the matters involved.

As reported in the Board's last annual report, a vote was held during June, 1956 on the question of revoking the Essex-Kent Sett Onion Growers' Marketing Scheme. Of the 192 growers eligible to vote, 41 growers voted in favour of revoking the scheme, 41 growers voted in favour of continuing the scheme and 2 ballots were spoiled. The remaining growers did not vote. Since the number voting in favour of revocation was less (21%) than the 33-1/3% of all persons eligible to vote, as required in the Regulations under The Farm Products Marketing Act, the scheme was continued in force.

There are now fifteen schemes covering twenty-seven crops in force under the Farm Products Marketing Act, viz.:

The Ontario Asparagus Growers' Marketing Scheme, 1938

The Ontario Pear, Plum and Cherry Growers' Marketing Scheme, 1938

The Ontario Peach Growers' Marketing Scheme, 1938  
 The Ontario Sugar Beet Growers' Marketing Scheme, 1942  
 The Ontario Seed-Corn Growers' Marketing Scheme, 1942  
 The Ontario Berry Growers' Marketing Scheme, 1944  
 The Ontario Bean Growers' Marketing Scheme, 1944  
 The Ontario Vegetable Growers' Marketing Scheme, 1946  
 The Ontario Hog Producers' Marketing Scheme, 1946  
 The Ontario Grape Growers' Marketing Scheme, 1947  
 The Ontario Soya-Bean Growers' Marketing Scheme, 1949  
 The Ontario Winter-Celery Growers' Marketing Scheme, 1949  
 The Ontario Honey Producers' Marketing Scheme, 1950  
 The Ontario Fresh-peach Growers' Marketing Scheme, 1954, and  
 The Essex-Kent Sett Onion Growers' Marketing Scheme, 1954.

A brief comment on the working of each scheme will illustrate the scope of the marketing activity involved.

### 1. The Asparagus Scheme

Some 800 growers sell asparagus annually to the canners in Ontario, for processing. Only the processing industry is regulated, i.e. asparagus sold on the fresh vegetable market is exempt from the scheme. After minimum prices and conditions of sale have been negotiated by the industry, a marketing agency appointed by the growers' local board sells all the asparagus purchased for processing, each growing district being allotted its share of the tonnage sold. An unique feature of this scheme is an agreement by the growers to cease cutting when total orders have been filled. In this way production is fitted to demand.

In 1956, 1,632 tons of asparagus were sold for processing at a total value of \$710,515.00. This compares with 1,635 tons valued at \$691,424.76 for processing in 1955.

Asparagus minimum prices in 1956 compared with 1955 were:

1956		1955	
Grade No. 1 .....	29¢ per lb.	Grade No. 1 .....	29¢ per lb.
Utility Grade A .....	22¢ per lb.	Utility Grade A .....	22¢ per lb.
Utility Grade B .....	15¢ per lb.	Utility Grade B .....	15¢ per lb.
Grade No. 2 .....	7¢ per lb.	Grade No. 2 .....	7¢ per lb.

### 2. The Pear, Plum and Cherry Scheme

Some 2,200 growers sold 3,983 tons of sour cherries valued at \$738,654.00; 357 tons of sweet cherries valued at \$90,686.00; 1,915 tons of plums and prunes valued at \$120,978.00; 5,434 tons of Bartlett pears valued at \$589,792.00 and 7,437 tons of Kieffer pears valued at \$408,285.00 or a total of 19,126 tons valued at \$1,948,395.00 sold for processing in 1956.

This compares with 7,153 tons of sour cherries valued at \$1,323,303.24; 812 tons of sweet cherries valued at \$172,350.04; 3,893 tons of plums and prunes valued at \$215,080.43; 5,561 tons of Bartlett pears valued at \$545,745.01 and 10,939 tons of Kieffer pears valued at \$522,521.51 or a total of 28,358 tons valued at \$2,779,000.23 sold for processing in 1955.

Cherry, plum and pear minimum prices in 1956 compared with 1955 were:

	1956	1955
Sour cherries .....	\$185. per ton	\$185. per ton
Sweet cherries		
white and similar varieties	240. " "	200. " "
black and similar varieties	260. " "	220. " "
Plums		
Damson variety .....	67. " "	61. " "
Jam types .....	57. " "	50. " "
Prunes .....	67. " "	61. " "
Bartlett pears 2" and up .....	110. " "	100. " "
Bartlett pears 1 3/4" to 2" .....	70. " "	60. " "
Kieffer pears 2 1/16" and up		
prior to November 3rd .....	50. " "	47.50 " "
after November 3rd .....	55. " "	52.50 " "
Pears, other than Bartlett		
or Kieffer varieties .....	70. " "	60. " "

### 3. The Peach Scheme

Some 1,450 growers sold 17,180 tons of peaches valued at \$1,756,592.00 for processing in 1956. This compares with 30,900 tons of peaches valued at \$2,909,290.48 sold for processing in 1955.

Peach minimum prices in 1956 compared with 1955 were:

	1956	1955
Jubilee .....	\$105.00 per ton	\$ 95.00 per ton
Elbertas .....	110.00 per ton	100.00 per ton
"V" type and other varieties	90.00 per ton	80.00 per ton

### 4. The Sugar Beet Scheme

In 1956 some 1,587 growers delivered 144,653 tons of sugar beets produced from 14,158 acres. This compares with 268,064 tons of sugar beets produced from 18,914 acres by 2,372 growers in 1955. Total value of beets to the growers was down at \$2,081,925.16 in 1956, allowing for supplementary payments still to be made compared to \$3,100,000.00 in 1955. The difference was due principally to the smaller planted acreage as a result of the cold wet spring in 1956. Average sugar content in 1956 was 17.9% compared to 16.04% in 1955. Average price delivered plant to the grower was \$14.44 (at June 1st) in 1956 compared to \$11.85 per ton in 1955. The increase in the average price paid in 1956 was due to the higher sugar content in the beets and the increase in wholesale prices for refined sugar on all principal markets following the purchase of large stocks of cane sugar in Cuba by the Government of the U.S.S.R.

### 5. The Seed-Corn Scheme

The membership of this marketing group is comprised of some 275 hybrid and open-pollinated corn growers in south-western Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer, a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel



average for the three months, December, January and February in each year. The base price for the 1956 crop was \$1.32 per bu., 14.5% moisture, and for the 1955 crop was \$1.35 per bu., 14.5% moisture.

In 1956, 320,000 bushels approximately of hybrid corn for seed and 35,000 bushels approximately of open-pollinated corn for seed were produced compared with 310,000 bushels of hybrid corn for seed and 29,000 bushels of open-pollinated corn for seed produced in 1955.

The minimum prices for hybrid corn for seed and for open-pollinated corn for seed in 1955 compared with those in 1954, were:

### Hybrid Corn for Seed

#### SCHEDULES A, B, C, D.

	1956	1955
	<i>The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:</i>	<i>The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:</i>
(a) Dealer supplies the seed and detassels the corn. Grower delivers the corn on the cob to the dealer.	\$1.72 a bushel.	\$1.75 a bushel.
(b) Grower supplies the seed, detassels and delivers the corn on the cob to the dealer.	\$1.72 a bu. and 55¢ a bu. = \$2.27 a bu.	\$1.75 a bu. and 55¢ a bu. = \$2.30 a bu.
(c) Grower supplies the seed, detassels, dries, shells and delivers the dried shelled corn to the dealer.	\$1.72 a bu. and 90¢ a bu. = \$2.62 a bu.	\$1.75 a bu. and 90¢ a bu. = \$2.65 a bu.

### Open Pollinated Corn for Seed

#### SCHEDULE E.

	1956	1955
	<i>The base price and a premium of 30% on the base price also additional allowance for certain varieties.</i>	<i>The base price and a premium of 30% on the base price also additional allowance for certain varieties.</i>
Yellow Dents (other than Early Golden Glow)	\$1.72 a bushel.	\$1.75 a bushel.
Other Dents (including Early Golden Glow)	\$1.72 a bu. and 10¢ a bu. = \$1.82 a bu.	\$1.75 a bu. and 10¢ a bu. = \$1.85 a bu.
Flints	\$1.72 a bu. and 50¢ a bu. = \$2.22 a bu.	\$1.75 a bu. and 50¢ a bu. = \$2.20 a bu.

### 6. The Berry Scheme

Some 400 growers sold 4,704,221 qts. of strawberries valued at \$891,742.00; 583,884 qts. of red raspberries valued at \$218,252.00 and 278,429 qts. of purple raspberries valued at \$93,790.00 or a total of 5,566,534 qts. valued at \$1,203,784.00 for processing in 1956. This compares with 4,980,314 qts. of strawberries valued at

\$988,645.25; 331,485 qts. of red raspberries valued at \$107,391.98 and 290,797 qts. of purple raspberries valued at \$91,340.36 or a total of 5,602,596 qts. valued at \$1,187,377.59 sold for processing in 1955.

Strawberry and raspberry minimum prices in 1956 compared with 1955 were:

	1956	1955
Strawberries .....	15¢ per qt. box	15¢ per qt. box
Raspberries		
Red .....	Open Market	Open Market
Purple .....	27½¢ per qt. box	27½¢ per qt. box

## 7. The Bean Scheme

Some 7,000 growers marketed approximately 1,100,000 bushels of edible dry beans in 1956 compared with 900,000 bushels in 1955. The minimum price to the growers was \$6.25 per cwt. in 1956 compared to \$6.15 per cwt. in 1955. An additional storage allowance was made to the growers of 15¢ per cwt. on all beans sold during the period January 1st to July 31st in both years. A graduated scale of charges by dealers for grading and picking beans for the growers in excess of 2% damage and in excess of 18% moisture was negotiated and established. The fee deducted from the growers to support the minimum price in each year was 45¢ per bushel in addition to the regular 5¢ per bushel licence fee for administration purposes. Out of this fee 42¢ per bushel on the 1955 crop was returned to the growers and 20¢ per bushel (estimated) will be returned on the 1956 crop to the growers since its marketing was not completed at the time of writing this report. The 3¢ per bushel difference in 1955 and the estimated 25¢ per bushel difference in 1956 was used to market some 45,000 bushels of the 1955 crop and an estimated 125,000 bushels of the 1956 crop which was surplus to domestic requirements.

## 8. The Vegetable Scheme

Some 11,500 growers sold 223,237 tons of tomatoes valued at \$7,052,228.00; 19,715 tons of green peas valued at \$1,958,500.00; 56,832 tons of sweet corn valued at \$1,420,773.00; 2,452 tons of green and wax beans valued at \$250,957.00; 8,299 tons of beets valued at \$264, 281.00; 7,479 tons of cabbage valued at \$111,937.00; 12,587 tons of carrots valued at \$348,559.00; 6,259 tons of pumpkin and squash valued at \$56,763.00 and 899 tons of lima beans valued at \$93,327.00 for processing in 1956, or a total tonnage of 337,759 tons valued at \$11,557,325.00.

This compares with 243,320 tons of tomatoes valued at \$7,530,852.14; 29,673 tons of green peas valued at \$2,943,921.92; 64,641 tons of sweet corn valued at \$1,651,718.98; 1,698 tons of green or wax beans valued at \$170,156.46; 7,347 tons of beets valued at \$247,641.09; 3,759 tons of cabbage valued at \$54,147.33; 11,894 tons of carrots valued at \$320,347.29 and 5,968 tons of pumpkin and squash valued at \$54,041.74 for processing in 1955 or a total tonnage of 368,300 tons valued at \$12,972,826.95.

Minimum prices for 1956 compared with 1955 were as follows:

	1956	1955
Tomatoes—No. 1 .....	\$ 37.00 per ton	\$37.00 per ton
—No. 2 .....	25.00 " "	24.00 " "
Green Peas—graded average of tenderometer readings .....	98.50 " "	98.50 " "
for tenderometer readings above 121 .....	88.50 " "	88.50 " "

Sweet Corn .....	25.00	" "	25.00	" "
Green or Wax Beans .....	100.00	" "	98.00	" "
Beets				
(a) for beets graded by the processor—				
$\frac{3}{4}$ " to $1\frac{1}{4}$ " diameter .....	70.00	" "	70.00	" "
$1\frac{1}{4}$ " to $1\frac{3}{4}$ " " .....	41.00	" "	41.00	" "
$1\frac{3}{4}$ " to $2\frac{1}{2}$ " " .....	30.00	" "	31.50	" "
$2\frac{1}{2}$ " to $4\frac{1}{2}$ " " .....	15.00	" "	15.00	" "
(b) for ungraded beets				
$1\frac{1}{2}$ " diameter and up .....	24.00	" "	24.00	" "
Cabbage .....	13.00	" "	13.00	" "
Carrots				
(a) ungraded minimum diameter .....	52.00	" "	52.00	" "
$1\frac{1}{4}$ " June 25th to August 15th				
(b) ungraded minimum diameter .....	34.00	" "	34.00	" "
$1\frac{1}{2}$ " August 16th to August 31st				
(c) ungraded minimum diameter .....	27.00	" "	27.00	" "
$1\frac{1}{2}$ " Sept. 1st to Sept. 15th				
(d) ungraded minimum diameter .....	23.50	" "	23.00	" "
$1\frac{1}{2}$ " Sept. 16th to Nov. 10th.				
(e) ungraded minimum diameter .....	27.00	" "	27.00	" "
$1\frac{1}{2}$ " Nov. 11th to March 31st				
Lima Beans .....	103.75	" "	.....	
Pumpkin and Squash .....	9.00	" "	9.00	" "

## 9. The Hog Scheme

Despite the legal challenge to the validity of several regulations of the Ontario Hog Producers' Marketing Scheme referred to at the beginning of this report, The Ontario Hog Producers' Co-operative (the marketing agency appointed by the Ontario Hog Producers' Marketing Board) continued its programme through 1956 of establishing minimum prices daily on live hogs, of directing their marketing and of establishing hog assembly points at Chatham, Barrie and Lindsay. These were in addition to those established at Windsor, Stratford and London in 1955 and Kitchener in 1954.

The marketing agency's hog directional programme was more actively promoted during the year under review. Beginning in July, 1956 some 9% of the hogs graded were being sold on the open market with the balance being shipped direct to the packers. The addition of three new assembly points, bringing the total to seven, and the emphasis of the directional programme in Grey and Bruce counties, two of the larger hog producing districts, resulted in some 23% of the hogs graded being sold on the open market with the balance being shipped direct to the packers by the end of the fiscal year.

## 10. The Grape Scheme

Some 825 growers marketed 23,371 tons of grapes valued at \$1,980,576.00 for processing in 1956. This compares with 24,794 tons of grapes valued at \$2,030,516.73 sold for processing in 1955.

Grape minimum prices in 1956 compared with 1955 were:

	1956	1955
Grapes .....	\$84.00 per ton	\$81.25 per ton



### 11. The Soya-Bean Scheme

This scheme is similar in principle to the other cash crop schemes in operation except that the market for soya-beans is limited entirely to a few processors for manufacture into various soya oil and meal products and that Canada is not more than 50% self-sufficient at the present time in her production of soya-beans for her overall edible oil and meal requirements. Soya-beans may be imported free of duty and oil and meal may be imported at moderate tariff rates. Hence the cost of soya-beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya-beans, soya-bean oil and a host of other competing edible oils. Faced with this situation for the eighth time in its eight years of operation, a Negotiating Committee decision recommended that a fixed minimum price for soya-beans to the 11,000 interested Ontario growers was not practical, and that the price paid should be the trading price from day to day on an open market basis. A dealer's maximum charge of 10¢ per bu. to the grower for cleaning, handling and selling soya-beans, which due to competition between the dealers is seldom charged in full, and a discount of 2½¢ per bu. for each ½% moisture content over 14% and up to 18% to cover shrink and drying expenses and for soya-beans with moisture in excess of 18%, a discount of 5¢ per bu. for each ½% of moisture content with cash to be paid by the dealer to the grower for all soya-beans on delivery were the main terms of contract negotiated and established under the scheme. Where soya-beans are dried, there shall be a maximum charge of 1¢ per bu. to the grower for each ½% of moisture content over 14%. Due largely to the development of early maturing varieties and to the elimination of imported soya-beans from the Orient, the production of this crop has now reached commercial proportions never before contemplated in Ontario. After several years of increasing acreage, the industry is now tending to stabilize itself at about present proportions. Acreage planted in 1956 was 225,000 acres compared to 214,000 acres in 1955. Yield due to a late wet spring decreased in 1956 to 4,905,000 bu. compared to 5,655,000 bu. in 1955. The export market for Canadian soya-beans which developed in the United Kingdom in 1953 with 55,000 bu. shipped, continued in 1954, 1955 and 1956 with 914,000 bu., 1,567,800 bu., and 870,670 bu. respectively being exported. Canadian soya-bean grade standards are very desirable to United Kingdom buyers and, so long as Canadian quality remains high, a continued market seems assured. At times the export market offers more money than the domestic market. United States prices have usually set Ontario soya-bean prices. Occasionally, then, when Ontario prices are governed by the United Kingdom market instead of by the American market, Ontario growers have benefited substantially through the additional competition.

### 12. The Winter-Celery Scheme

Due to the supply of celery for storage (celery marketed after October 15th in each year) being much below normal in 1956 and with strong markets existing for what supply was available, the Ontario Winter-Celery Growers' Marketing Board decided to exempt all storage celery from the regulations of the scheme and declare an open market so that each grower could sell his own crop.

### 13. The Honey Scheme

As reviewed in previous annual reports, this scheme never came into operation since the honey producers, following the vote taken on the plan in 1950, felt it necessary to regulate the marketing of all honey sold in Ontario regardless of where the honey was produced. The Farm Products Marketing Act, however, only provides authority for the regulation of the marketing of farm products produced in the Province.

#### 14. The Fresh Peach Scheme

Several important changes were made by the Ontario Peach Growers' Co-operative, the single sales agency appointed by The Ontario Fresh-peach Growers' Marketing Board under this scheme, to handle the 1956 crop of fresh peaches to overcome some of the difficulties experienced in marketing the 1954 and 1955 crops. The fact the 1956 crop turned out extremely light may have helped in getting the new trading arrangements established. The major changes were:

1. a single f.o.b. price for Ontario peaches was set by the agency. This established one uniform price to the trade. Peach growers feel the change brought about a more stable price level as there was only one price drop and one price increase through the 1956 season compared to five price decreases in each of the 1955 and 1954 marketing seasons.
2. all peaches shipped out of the Province were required to be pre-cooled. Approximately 40% of all peaches shipped to the wholesale markets in 1956 were pre-cooled, which resulted in a better quality product reaching the consumer.
3. some 35% of all peaches to the wholesale markets in 1956 were shipped in 6-qt. baskets, two layers of  $2\frac{1}{4}$ " peaches and up per basket with no cello covering, packed six baskets in a corrugated master container. This new method of packaging is believed to have improved peach quality at delivery points.
4. all growers were contracted to the shipper of their own choice for the season by the agency. This resulted in more reliable information being available on daily supplies and enabled the agency to provide the trade with continuity of supply.

Over the 10-week marketing period in 1956 some 2,000,000 6-qt. baskets (21,000,000 lbs.) of peaches were marketed by the agency, having a total value of \$1,460,003.89 compared to 3,900,000 6-qt. baskets (45,000,000 lbs.) valued at \$2,510,205.08 in 1955 and 3,500,000 6-qt. baskets (41,000,000 lbs.) valued at \$2,148,893.18 in 1954. Net prices received by the grower for his fruit were 6.77¢ per lb. in 1956, 5.03¢ per lb. in 1955 and 4.94¢ per lb. in 1954.

A service charge for administrative expenses of 6.9¢ per 6-qt. basket, due to the small crop, was made to the grower by his agency in 1956 compared to 5¢ per 6-qt. basket in 1955 and in 1954.

#### 15. The Essex-Kent Sett Onion Scheme

This scheme is similar to the fresh-peach scheme in its method of operation. A non-share private company was appointed the marketing agency of the Essex-Kent Sett Onion Growers' Marketing Board. Buyers are required to obtain their supplies from the agency or from one of its 17 licensed sub-agents.

In 1956 there was approximately 580 acres of sett-onions planted compared with 585 acres in 1955. The yield per acre in 1956, due to the late wet spring, was considerably below the yield in 1955. As a result, the marketing agency had to market 150,470 #50-lb. bags of onions grown by 192 growers in 1956 compared to 259,953 #50-lb. bags of onions grown by 177 growers in 1955, or a decrease of 109,483 bags. As a result, the average price per bag received by the growers in 1955 of \$3.14 per bag was well above the average price per bag received by the growers in 1955 of \$1.52.

#### THE FARM PRODUCTS CONTAINERS ACT

The purpose of the Act is to provide a means of levying a licence fee on containers which include any bag, basket, box, can, crate or other receptacle used or suitable for use in the marketing of fruit, vegetables or honey.

The Act was passed at the request of the Ontario Fruit and Vegetable Growers' Association and the Ontario Beekeepers' Association, and the authority to collect licence fees is presently limited to the members of these Associations within the meaning of the Agricultural Associations Act. The licence fee is payable by the grower or user of the containers purchased but is collected by each manufacturer of the containers and is forwarded by him monthly to the appropriate Association. The amount of the fee is added to the invoice of each grower or purchaser on the manufacturer's selling price.

Licence fees in the amount of 1% added to the manufacturer's selling price of all wooden and paper containers manufactured and sold for use in the marketing of fresh fruits and vegetables produced in Ontario have been levied and paid to the Ontario Fruit and Vegetable Growers' Association since November 1st, 1947. The fees received during the fiscal year ended March 31st, 1957, amounted to \$24,895.32 and the total fees received to date by the Association since the levy was imposed amount to \$286,219.58.

Licence fees in the amount of 5% added to the manufacturer's selling price of all cans and paper containers manufactured and sold for use in the marketing of honey produced in Ontario, have been levied and paid to the Ontario Beekeepers' Association since April 1st, 1948. The fees received during the fiscal year ended March 31st, 1957, amounted to \$12,350.00 and the total fees received to date by the Association since the levy was imposed, amount to \$126,799.69.

#### THE CO-OPERATIVE LOANS BOARD OF ONTARIO

This Board was established by Order-in-Council dated June 21, 1956 and consists of the following members:

B. P. Teasdale .....	Chairman
W. A. Montcalm .....	Member
W. C. Browning .....	Member
J. W. Drennan .....	Secretary

The Board is responsible for the administration of The Co-operative Loans Act, under which the Province is authorized to make loans to Agricultural Co-operative organizations to assist these organizations in financing capital expenditure necessary to provide facilities for the grading, cleaning, packing, storing, drying, processing or marketing farm products.

The growing importance of Producer owned Co-operatives in the marketing of farm products of every kind has resulted in an increased demand for loans and the ever increasing cost of construction and equipment is reflected in the larger amounts of loans being made to-day as compared with those of a few years ago.

Loans made available under this legislation have enabled the fruit and vegetable producers of Ontario to provide a chain of some thirty cold storage plants spread across the producing areas of the Province. These cold storage warehouses have been directly responsible for the grower extending his marketing season from a few weeks or months following harvest to a steady supply of good quality produce being supplied to consumer markets throughout the year.

Several of the Co-operative storages are now improving their storage facilities by the addition of controlled atmosphere rooms. Some of these additions are now completed and others are under construction.

There has also been a marked increase in the number of farmer owned Co-operatives dealing in grain and feeds and in order to provide the facilities for drying and



elevator storage many of these Co-operatives have taken advantage of loans available under this Act to help finance these undertakings.

During the year ended March 31, 1957 the following loans were made under this Act:

Durham Growers Co-operative .....	(Cold Storage)	49,900.00
Stormont Co-operative .....	" "	48,064.00
Harrow Potato Co-operative .....	" "	32,000.00
Klondyke Gardens Co-operative .....	" "	9,100.00
Beaver Valley Co-operative .....	" "	14,000.00
Allied Fruit Farms .....	" "	31,800.00
Georgian Bay Fruit Growers .....	" "	20,000.00
Grey-Bruce Co-operative .....	(Feed Mill)	15,000.00
Lynden Co-operative .....	" "	10,000.00
Earlton Co-operative .....	" "	13,000.00
Temiskaming Producers Co-operative ..	" "	14,200.00
Parkhill Co-operative .....	" "	10,000.00
Orford Farmers Co-operative .....	(Grain Elevators)	40,000.00
Chatham Farmers Co-operative .....	" "	50,000.00
Inwood Farmers Co-operative .....	" "	50,000.00
Norfolk Co-operative .....	" "	100,000.00
Nipissing Sudbury Co-operative .....	(Creamery)	40,000.00
Manitoulin Turkey Co-operative .....	(Poultry Processing)	35,000.00
		\$582,064.00

## *Dairy Branch*

The Dairy Branch is organized under The Milk Industry Act, 1954, with the basic administration divided between two Boards — The Milk Control Board administers Part II of the Act, which deals with the marketing of fluid milk; The Milk Products Board of Ontario administers Part III of the Act, which deals with the production and manufacturing of milk products. Part IV of the Act gives the right of by-law to municipalities to inspect and license vendors of fluid milk and to inspect fluid milk producing premises. The Milk Industry Commission of Ontario, an advisory body, is appointed under Part I of the Act. The Commission may inquire into any matter relating to the producing or marketing of milk and make recommendations and, subject to the approval of the Lieutenant-Governor in Council, make regulations respecting the sanitary production of milk.

Part I of the Act, as well, allows for the appointment by the Lieutenant-Governor in Council, of a Milk Producers' Co-ordinating Board. This Board functioned during 1956-57 and consisted of four representatives from each of the four producers' groups, namely, The Ontario Whole Milk Producers' League, The Ontario Cheese Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board and The Ontario Cream Producers' Marketing Board.

Part I also allows for the appointment by the Lieutenant-Governor in Council of a Dairy Commissioner. It is the responsibility of the Dairy Commissioner to supervise and co-ordinate the administration of The Milk Industry Act, 1954.

### **The Milk Industry Commission**

The Milk Industry Commission of Ontario was appointed by order-in-council October 20, 1955. They functioned throughout 1956-57. Mr. C. E. Lackner has been acting as secretary, Mr. G. W. Greer and Mr. R. E. Drope acting as co-chairmen. Regular monthly meetings of the Commission have been held to consider problems facing the industry; new regulations and several recommendations have been made on matters of policy to the Dairy Commissioner.

### **Formula Pricing Committee**

The Formula Pricing Committee appointed in 1951 continued to function in 1956-57. The Committee is as follows: Dr. H. W. Patterson, Dr. E. C. Hope, Professor Ralph Campbell, and Everett M. Biggs, Chairman. Mr. Roy Lick, secretary of The Ontario Whole Milk Producers' League, acted in an advisory capacity on the part of the producers and Mr. Murray Stewart, Comptroller, Dominion Dairies, on behalf of The Ontario Milk Distributors' Association.

### **Exhibitions and Fairs**

The Dairy Branch head office and field staff has co-operated with the exhibition and fair committees in connection with the following:

- The Royal Winter Fair,
- The Canadian National Exhibition,
- The Ottawa Winter Fair,
- The Western Fair,
- The Middlesex Seed Fair,
- The North Bay Rotary Fair.

The field staff has also co-operated with local fairs in arranging educational exhibits.

The Dairy Branch staff, in co-operation with the O.A.C., the industry and the Canadian National Exhibition, arranged a Dairy Queen Milking Competition at the C.N.E. as industry promotion. Fifty young farm women from various parts of the province competed for the title of Dairy Queen in 1956.

### Milk Quality

A joint committee formed in 1955 of representatives of Health Departments, whole milk producers, milk distributors and the Automotive Transport Association recommended certain regulations be passed dealing with the production, handling and transportation of fluid milk. These recommendations suggested the provincial regulations be enforced by the municipalities under Part IV of The Milk Industry Act so that there would be greater uniformity of production requirements insofar as general sanitation, equipment and milk quality were concerned. The Dairy Branch co-operated with this committee in the formulation of acceptable regulations. The regulations recommended were made by The Milk Industry Commission of Ontario and approved by order-in-council on November 22, 1956 and filed on November 23, 1956. They appeared in the Gazette as Ontario Regulations 233/56. These regulations deal with the production of fluid milk and with such items as the health of cows, quality of milk produced, sanitary conditions on the farm, requirements for milk houses, requirements for farm bulk tank installations and acceptable equipment for farm bulk tanks, tank trucks and vehicles which may be used for the transportation of milk.

Provision is being made for increased personnel on the Dairy Branch staff to work with the farmers on quality problems.

The Dairy Branch co-operated with the Agricultural Engineering Department of the O.A.C. and the Department of Dairying, O.A.C., and the Ontario Department of Health in the formulation of a milk house bulletin. This bulletin is now prepared and ready for printing.

At the same time, provision was made for the Agricultural Engineering Department at the O.A.C. for a supply of plans for milk house construction to be made available to farmers through extension outlets.

### Research

The Dairy Branch co-operated with the O.A.C. and the Kemptville Dairy School in arrangements for certain research projects. An initial report was issued by Dr. R. B. How of the Department of Agricultural Economics, O.A.C. with reference to a study of bulk milk handling in the Province of Ontario. This study was mainly restricted to the farm aspect. Provision has been made for this study to continue, with special reference to bulk tank transportation and the operation of dairies under the bulk delivery system.

Arrangements were made at the Dairy School, Kemptville, to carry out a special study with reference to the keeping quality of cheddar cheese. The Dairy School also co-operated in a study of milk quality as delivered to milk manufacturing plants and cheese factories in Eastern Ontario. This study will continue in 1957.

Arrangements were made with Professor A. G. Leggatt of the Department of Dairying, O.A.C., to carry out a study in connection with certain problems re pipeline milkers. This study will continue in 1957.



Preliminary arrangements were made with the Dairy Department, O.A.C., to investigate the methods of cream sampling as used by Ontario creameries, as well as the type of container which would be most suitable for the storing of cream samples. Mr. D. C. Chunn was employed in March, 1957 to work with the Dairy Department, O.A.C., in connection with the last two studies.

During 1956-57, the Dairy Branch, in conjunction with the Farm Economics Branch of the Ontario Department of Agriculture, carried out a study on the economic conditions in Ontario cheese factories. A report on this study will be made in 1957.

### Courses

During 1956-57, members of the Dairy Branch staff co-operated as instructors with the 3-month Dairy Short Courses conducted at the O.A.C. and the Kemptville Dairy School, during the period of January to March.

Two special courses were held at the O.A.C., Guelph, to qualify drivers of bulk milk tank trucks as testers and graders of milk. The Dairy Branch assisted as instructors at these courses. A total of 46 truckers availed themselves of these courses.

### Press, Radio and Television

During the year, closest co-operation has been maintained with the press, radio and television. Members of the Dairy Branch staff have made several radio broadcasts and several recordings were made on dairy subjects for local station broadcasting.

### Meetings Attended Outside of Ontario

Mr. J. L. Baker attended the annual meeting of The American Dairy Science Association, held in Connecticut in June, 1956. He also attended the annual meeting of The American Butter Institute, held in Chicago in October, 1956. Mr. Everett Biggs attended the annual meeting of The National Dairy Council, held in Quebec City in September, 1956.

### Annual Meeting — International Association of Milk Control Agencies

This is an association of Government dairy officials from Canada and the U.S. Mr. C. M. Meek was president of this Association for the year 1956. The annual meeting was held in Toronto in September, 1956. There were 151 official members in attendance from Canada and the U.S., with special observers from the U.K. In addition to the regular members of the Association, a large number of industry guests were in attendance. The Ontario Department of Agriculture tendered a special dinner to the Association and its guests.

### Cheese Promotional Dinner

A special cheese industry dinner was held in June, 1956 which was attended by cheese producers, cheese manufacturers, the cheese trade and the cheese merchandizers of Ontario. The purpose of this dinner was to bring all groups together and give an opportunity to the Dairy Farmers of Canada to display to the merchandisers the promotional material which would be available for the October Cheese Festival. As well, it afforded an opportunity for the leaders of the cheese industry to meet the people who were selling their product to the consumer.

### The Oleomargarine Act

The Oleomargarine Act is administered by the Dairy Commissioner, who is appointed as Chief Inspector under the Act. All manufacturers and wholesalers of oleomargarine are licensed. Strict supervision is given to the advertising of oleomargarine, to the composition of the product and its sale in eating establishments. There are two field inspectors.

Towns, Villages and Cities covered .....	174		
Manufacturing Establishments inspected .....	10		
Wholesalers checked .....	48		
Wholesale Licences .....	3		
Restaurants inspected .....	2,269		
" not using margarine in any form .....	1,107	48.78	per cent
" using margarine for baking .....	508	22.38	" "
" " on tables to replace butter .....	291	12.8	" "
" " in sandwiches .....	246	10.8	" "
" mixing margarine with butter .....	167	7.36	" "
" serving margarine on tables, or in sandwiches, complying with the Act .....	44	2.0	" "
Manufacturers of Oleomargarine .....	10		
Brands presently being sold .....	26		
Wholesalers .....	139		
Retail Stores checked .....	989		
Moisture Tests made by Inspectors .....	42		

### The Edible Oil Products Act, 1952

The Edible Oil Products Act comes under the supervision of the Dairy Commissioner, who is appointed Chief Inspector under the Act. The field inspectors appointed under The Oleomargarine Act also act as inspectors under The Edible Oil Products Act. The Act allows for the licensing of all manufacturers and wholesalers of edible oil designated products in the Province of Ontario, a designated oil product being one that does not contain a dairy product and is manufactured by any means by which fat or oil, other than that of milk, has been processed or mixed or blended with one or more other ingredients so that the resultant product is an imitation of, or resembles, any dairy product. To date, no one has been licensed as a manufacturer or wholesaler of a designated edible oil product.

### Legislation

Bill 160 — The Milk Industry Act, 1957, was passed at the 1957 session of the Legislature, to come into force on a day named by the Lieutenant-Governor by his Proclamation.

The explanatory notes attached to this Bill are as follows:

The purpose of this Bill is,

1. To establish a Board to be known as "The Milk Industry Board of Ontario" which will exercise all the functions of the two existing Boards, namely, The Milk Control Board of Ontario and The Milk Products Board of Ontario.
2. To regulate and control the marketing of fluid milk produced in Ontario and sold to distributors and to regulate and control the products made from fluid milk and sold by distributors. In addition, the Bill provides for the control and regulation of the marketing within Ontario of products in respect of which a plan is in force under the Act.
3. To provide for regulations establishing standards in connection with the production and handling of milk and cream.

4. To provide for regulations establishing standards of quality and composition of milk products.
5. To provide for regulations establishing sanitary standards in creameries, cheese factories and milk processing plants.
6. To authorize municipalities to pass by-laws to license vendors, other than producers, of milk or cream and respecting the inspection of places where milk and cream destined for distribution within the municipality are produced or processed.

### THE MILK PRODUCTS BOARD

The Board is set up under Part III of The Milk Industry Act, 1954, and is responsible for the administration of this part and the regulations. The personnel of the Board is C. E. Lackner, Chairman; Dr. H. L. Patterson, Member; G. F. Perkin, Member; and J. L. Baker, Secretary.

#### Field Staff

The general supervision of the fieldmen is the responsibility of the secretary of the Board.

There were 33 fieldmen on the staff during 1956. Two chief instructors, with 17 cheese industry fieldmen, had charge of the inspection, instruction and extension for the cheese factories and their producers. One chief instructor has supervision over 3 fieldmen in Western Ontario and 4 fieldmen in Central Ontario. The other chief instructor has supervision over 10 fieldmen in Eastern Ontario.

Ten fieldmen have supervision over the inspection, instruction and extension of the creameries and processing plants and their producers, while one fieldman confined his activities solely to processing plants and their producers.

The fieldman in the eastern section of Northern Ontario also has supervision over the cheese factories and assists The Milk Control Board in their supervision of distributing plants and their producers. Similarly, The Milk Control Board fieldman in the western section of Northern Ontario supervises the creameries, cheese factories and processing plants in that area for The Milk Products Board.

Two fieldmen were made available to assist the Farm Economics Branch in a survey of cheese factory operating costs and spent full time on this work during the year.

In keeping with the department policy to provide farm service calls on quality improvement, the first of these fieldmen in the person of Russell Bradford was appointed in January 1957 and was located in the counties of Perth and Huron.

Three fieldmen in Eastern Ontario teach at the Dairy School at Kemptville during the winter short course and two fieldmen in Western Ontario teach at the O.A.C. Dairy School winter short course.

Norman Truelove, cheese industry fieldman in the North Leeds territory since 1944, retired from the staff on December 31, and Edward McAllister in the Russell-Prescott counties territory, who has been on the field staff since 1921, retired on March 31, 1957. These men are being replaced by men who will concentrate on quality control at the farm level.

#### Activities of the Board

The Board held 23 meetings during the year.

Regulations made by the Board pursuant to clause (j) of Section 35 of The



Milk Industry Act, 1954, designating products as milk products, were filed with the Registrar of Regulations as O. Reg. 212/56 on November 1, 1956.

Very important and far reaching regulations made by the Board and approved by the Lieutenant-Governor in Council, pursuant to Section 42 of The Milk Industry Act, 1954, pertaining to the licensing, construction and operation of plants, were filed with the Registrar of Regulations as O. Reg. 214/56 on November 1, 1956.

Twenty-five applications for permits to construct or alter buildings intended to be used as plants were considered by the Board.

Approval was granted to:

- 1 to alter a building to be used as a creamery (new creamery),
- 2 to alter a building from existing creameries,
- 3 to alter a building to be used as a processing plant (new processing plants),
- 2 to construct an addition to a building to be used as a processing plant (new processing plants),
- 1 to construct an addition to a building to be used as a processing plant and cheese factory (new processing plant and cheese factory),
- 3 to construct an addition to an existing creamery and processing plant,
- 3 to construct a building to be used as a cheese factory (new cheese factory),
- 2 to alter a building to be used as a cheese factory (new cheese factory),
- 1 to construct a new building from an existing cheese factory,
- 2 to alter a building from existing cheese factories.

No action was taken on 3 applications to alter or construct a building to be used as a cheese factory and one application was refused.

Permission was granted to 7 creameries which ceased to manufacture butter to continue to receive cream and tranship same regularly to another creamery for manufacture.

Approval was given for the use of cultures for cheesemaking made from low heat skim milk powder.

One cheese factory was refused a renewal of licence until all the requirements of the regulations were met.

Three producer marketing plans operate under Part III of The Milk Industry Act, 1954, namely:

- The Ontario Cheese Producers' Marketing Plan,
- The Ontario Concentrated Milk Producers' Marketing-for-processing Plan,
- and
- The Ontario Cream Producers' Marketing-for-processing Plan.

The general operations of each plan as they affected the Board follows:

#### The Ontario Cheese Producers' Marketing Plan

The Ontario Cheese Producers' Marketing Plan as set up under O. Reg. 81/55 was amended by O. Reg. 50/56 and filed on April 3, 1956, with the Registrar of Regulations. The amended plan defined 6 districts appointing members to the local board and provided for 2 district members to be appointed each year for a three-year term. It also provided for the appointment of a member-at-large to the local board.

Regulations respecting the marketing of cheese under O. Reg. 81/55 were amended by the Board and approved by the Lieutenant-Governor in Council and filed with the Registrar of Regulations as O. Reg. 105/56 on June 25, 1956. These amendments reduced the cheese exchanges from six to two, to be located in Kingston and Stratford and provided for the sale of cheese by the Dutch Auction Clock on the Kingston Cheese Exchange. The Ontario Cheese Producers' Co-operative was named as the agency buying Canada First Grade cheese unsold at the minimum price on the exchanges.

The negotiating committee as set up under this Plan made three agreements for minimum prices and one award was made by the Negotiating Board, appointed when the negotiating committee failed to reach an agreement. Judge A. B. Currey, Gore Bay, was appointed by the Board as chairman of this Negotiating Board.

The following were the minimum prices, approved in the above agreements and award and duly filed by the Board, to be paid by the cheese buyers per pound of cheddar cheese f.o.b. the factory:

	<i>Agreement</i> 56-3	<i>Award</i> 56-1	<i>Agreement</i> 56-4	<i>Agreement</i> 56-5
<i>Filing Date</i>	<i>June 1</i>	<i>August 9</i>	<i>August 24</i>	<i>November 1</i>
Canada First Grade .....	32¢	33¢	33½¢	34¢
Canada Second Grade .....	30¢	31¢	31½¢	32¢
Canada Third Grade .....	28½¢	29½¢	30¢	30½¢
<i>Effective Date</i> .....	<i>June 1</i>	<i>August 8</i>	<i>August 24</i>	<i>November 1</i>

Under agreements 56-4 and 56-5, the minimum price for Canada First Grade only applied on cheese bought on the Kingston Cheese Exchange. All cheese below Canada First Grade would find its own price level on the Dutch auction clock. Agreement 56-5 also provided for one half cent less than the agreed minimum price for all cheese sold in used boxes.

The minimum prices established on June 1st were two cents higher than the previous agreement made on November 15, 1955.

#### The Ontario Concentrated Milk Producers' Marketing-for-processing Plan

O. Reg. 204/54 pertaining to the marketing of milk for processing were amended by the Board with the approval of the Lieutenant-Governor in Council by revoking the regulations respecting the licensing of processing plants, since this is now covered by O. Reg. 214/56. This amendment was filed with the Registrar of Regulations as O. Reg. 235/56.

The Board filed 3 agreements for charges for transporting milk to processing plants. Two were made by "The Local Negotiating Committee for Transporting Milk for Processing" to Acme Farmers Dairy, Napanee, and one by "The Local Negotiating Committee for Transporting Milk for Processing" to Producers Dairy, Almonte.

Two agreements made by "The Negotiating Committee for Concentrated Milk Products Other Than Case Goods" were filed as was one award made by "The Negotiating Board", appointed when the negotiating committee failed to agree. Judge W. F. Schwenger of Hamilton was appointed by the Board as chairman of this Negotiating Board.

The following were the minimum prices approved in these agreements and the award, for 100 pounds of milk testing 3.5% milk fat:

Filing Date	Agreement 56-2	Award 56-3	Agreement 57-1
	March 9	December 20	January 4
(a) For the manufacture of butter and roller powder	\$2.55	\$2.70	\$2.70
(b) For the manufacture of butter and spray powder	\$2.60	\$2.75	\$2.85
(c) For the manufacture of spray whole milk powder for domestic sale .....	\$2.55	\$2.70	\$2.75
(d) For the manufacture of roller whole milk powder for domestic sale .....	\$2.45	\$2.60	\$2.65
(e) For the manufacture of butter and casein .....	\$2.50	\$2.65	\$2.65
(f) For the manufacture of casein and the fat used for any other purpose .....	\$2.50	\$2.65	\$2.65
(g) For the manufacture of whole milk powder for export .....	\$2.35	\$2.50	\$2.55
(h) For the manufacture of skim milk powder for export .....	\$2.40	\$2.55	\$2.60
(i) Where the milk goes into all other products .....	\$2.65	\$2.80	\$2.85
Effective Date .....	March 16	December 20	January 1

The minimum prices established by agreement 56-2, compared with the previous negotiated minimum prices on November 8, 1955, were 10¢ lower for all categories except (e) and (f), which were unchanged and for (g) which was 15¢ lower.

As for the past 2 years, the above minimum prices for all milk in categories (a), (b), (e), (h) and (i) were based on a non-tenderable butter price of 60¢ per pound and would vary up or down at the rate of 4.2 cents per hundred pounds of milk for each one cent change in the average price of butter for the month, as quoted in The Toronto Globe and Mail. In no case was the minimum price to drop more than 10¢ per 100 pounds because of this escalator clause.

As a result of the escalator clause in the agreements and award, the following monthly changes were made on the basic price of 100 pounds of milk for the above five categories:

January	1956	—	7¢	decrease based on average non-tenderable butter price of	58.3¢
February	1956	—	7¢	" " " " " " " "	58.3¢
March	1956	—	7¢	" " " " " " " "	58.3¢
April	1956	—	10¢	" " " " " " " "	57.4¢
May	1956	—	10¢	" " " " " " " "	57.2¢
June	1956	—	10¢	" " " " " " " "	56.2¢
July	1956	—	10¢	" " " " " " " "	56.2¢
August	1956	—	10¢	" " " " " " " "	56.7¢
September	1956	—	9¢	" " " " " " " "	57.9¢
October	1956	—	7¢	" " " " " " " "	58.3¢
November	1956	—	8¢	" " " " " " " "	58.1¢
December	1956	—	6¢	" " " " " " " "	58.5¢
January	1957	—	6¢	" " " " " " " "	58.5¢
February	1957	—	6¢	" " " " " " " "	58.5¢
March	1957	—	6¢	" " " " " " " "	58.5¢

An award was filed on October 1st, which was made by the Negotiating Board appointed when the negotiating committee for Case Goods failed to reach an agreement. This award established a minimum price of \$2.90 per 100 pounds of milk



testing 3.5% milk fat when manufactured into evaporated and condensed milk case goods for domestic consumption and \$2.70 per 100 pounds of milk for other than domestic consumption. This was the first negotiated change in the minimum prices for such milk since April 16, 1953, when minimum prices of \$2.70 for domestic consumption and \$2.40 for export were established. Judge A. B. Currey, Gore Bay, was appointed by the Board as chairman of this Negotiating Board.

#### The Ontario Cream Producers' Marketing-for-processing Plan

O. Reg. 33/55 under this Plan, pertaining to the marketing of cream, were amended by the Board with the approval of the Lieutenant-Governor in Council, by revoking the regulations respecting the licensing of creameries, as this provision is also covered in O. Reg. 214/56. The amendment was filed with the Registrar of Regulations as O. Reg. 234/56.

With a floor price established for Canada First Grade Creamery butter by the federal government of 58¢, first grade milk fat prices for cream remained generally at this level. No agreement is filed with the Board for minimum prices for cream under this Plan.

#### General

The cheese industry was highlighted during the year with definite firming of prices and a strong export demand until late in the year. This, however, did not result in an increase of cheese production in the province, as a decline of over 2½ million pounds was recorded. The late season was partially responsible for this decline. There was a marked increase in the quantity of other varieties of cheese made in Ontario. Cottage cheese is becoming more popular, as is indicated by the increase in production of this commodity.

Cheddar cheese prices were 3.3¢ per pound higher than the previous year. This favourable price put cheese milk in an excellent competing position with milk for other dairy products. There was no marked division of milk from processing to cheese.

The Dutch Auction Clock was introduced as the method of selling cheese on the Kingston Cheese Exchange on July 12. Considerable controversy and discussion took place as to the advantages of this method of selling. While it is debatable whether any higher prices were obtained, buyers generally expressed satisfaction with the method.

Dry skim milk production declined and while prices were stronger than the previous year, there was a depressing of prices early in the year, resulting in lower prices for milk. Demand strengthened both the product and milk prices towards the end of the year. The federal government announcement of a floor of 17¢ for spray process and 14¢ for roller process late in March 1957 would indicate continued firm prices for these products.

Dry whole milk production increased considerably and exports of this product were maintained.

Condensed milk production increased while evaporated milk production decreased. These products are mainly used in Canada, with continued increased consumption.

Butter production was down and butter prices generally followed the pattern of federal government re-sale policy. Winter selling price of government held butter was at the 58¢ floor price and was reduced to 56¢ in early spring in an effort to reduce the older stocks. Butter consumption increased and, with lower production,

prices strengthened the last quarter of the year, although the average price for the year was approximately  $\frac{3}{4}$  of a cent lower than in 1955. The federal announcement of the 58¢ floor price for another 2 years was received with satisfaction at the time but as the season progressed, cream producers were switching to the more lucrative returns from milk production. A definite trend in this direction was indicated in the cream producing areas of Wellington, Huron and Bruce counties.

The cool wet weather of the 1956 summer and fall appeared to have maintained the pastures. However, this was not reflected in any increase in milk produced and there was the usual seasonal decline despite the apparently good pastures.

Despite the cool weather, ice cream production showed only a small drop from the 1955 all-time high.

Increased use of pre-cut butter patties by the restaurant and hotel trade and the introduction of pound cartons of individually wrapped quarter pounds featured the creamery industry. These trends, with improved quality, have been responsible for increased consumption of butter.

While there was only a slight decrease in total milk production, an increase in fluid sales lowered the quantity available for manufacturing.

#### Plant Licences Issued

	1955	1956
Creameries only .....	172	169
Cheese Factories only .....	226	208
Processing Plants only .....	69	78
Milk Separating Plants only .....	1	....
Milk Receiving Stations only .....	13	18
Combined Cheese Factory and Creamery .....	9	8
Combined Creamery and Milk Separating Plant .....	....	1
Combined Creamery and Processing Plant .....	41	44
Combined Cheese Factory and Processing Plant .....	1	4
Combined Cheese Factory, Creamery and Processing Plant .....	5	4
	<hr/> 537	<hr/> 534

#### Graders' and Testers' Certificates Issued

With the promulgation of O. Reg. 214/56, provision was made for the transfer of Milk and Cream Graders' and Testers' Licences issued under O. Reg. 233/44 to certificates, as well as for the issuing of certificates to all persons qualifying for same. No licences were issued after 1955.

	Milk Grader	Milk Tester	Cream Grader	Cream Tester
Total licences issued to 1955 .....	637	968	408	491
Total certificates issued in 1956 .....	390	546	287	320

The Board held two series of written examinations for Milk and Cream Graders' and Testers' certificates, at eleven centres. 502 examinations were written in April, 1956, and 609 in March, 1957. At the latter examinations, operators of tank trucks which pick up milk from farm bulk tanks wrote the paper for a Milk Grader's Certificate. This certificate is now a requirement for these tank truck operators.

Provision was made in the regulations for the issuing of Apprentice Milk and Cream Graders' and Testers' Certificates. These are issued to persons who are gaining experience in grading and testing under the supervision of qualified certificate holders.

**Production of Milk Products in Ontario**

	1955	1956
Creamery Butter .....	84,207,000 lb.	79,540,000 lb.
Cheddar Cheese .....	59,471,000 lb.	56,863,000 lb.
Other Cheese (not including cottage) .....	5,517,000 lb.	6,664,000 lb.
Cottage Cheese .....	5,783,000 lb.	7,226,000 lb.
Ice Cream .....	12,491,000 gal.	12,225,000 gal.

**Concentrated Milk Products**

Condensed Whole Milk .....	12,420,000 lb.	14,339,000 lb.
Evaporated Whole Milk .....	114,571,000 lb.	111,902,000 lb.
Powdered Whole Milk .....	13,814,000 lb.	15,633,000 lb.
Condensed Skim Milk .....	3,843,000 lb.	3,009,000 lb.
Evaporated Skim Milk .....	7,433,000 lb.	7,053,000 lb.
Dry Skim Milk (Spray Process) .....	31,685,000 lb.	29,026,000 lb.
Dry Skim Milk (Roller Process) .....	9,946,000 lb.	9,454,000 lb.
Dry Skim Milk (Animal Feed) .....	594,000 lb.	.....
Dry Butter Milk .....	3,384,000 lb.	3,681,000 lb.
Casein .....	853,000 lb.	916,000 lb.
Miscellaneous Whole Milk Products In- cluding Malted Milk, etc. ....	17,043,000 lb.	18,155,000 lb.
Miscellaneous Milk By-products Including Dried Whey, Condensed Butter Milk, etc. ....	10,541,000 lb.	9,278,000 lb.
<b>Total Concentrated Milk Products .....</b>	<b>226,127,000 lb.</b>	<b>222,446,000 lb.</b>

Of the total production in Canada, Ontario produced:

71.1% of the cheese in 1956 compared with 74.1% in 1955

26.2% of the creamery butter in 1956 compared with 26.3% in 1955

46.0% of the concentrated milk products in 1956 compared with 47.5% in 1955, and

36.8% of the ice cream in 1956 compared with 33.8% in 1955.

**Value of Milk and Milk Products in Ontario****(a) Farm Value of Milk Produced for:**

	1955	1956
Creamery Butter .....	\$ 40,310,000	\$ 38,201,000
Factory Cheese .....	14,880,000	16,821,000
Ice Cream .....	5,134,000	5,280,000
Concentrated Whole Milk Products .....	9,881,000	10,811,000
Fluid Sales .....	75,236,000	78,730,000
Farm Consumed, etc. ....	13,698,000	14,036,000
<b>Total Farm Value .....</b>	<b>\$159,949,000</b>	<b>\$163,879,000</b>

**(b) Value of Milk Products:**

	1955	1956
Creamery Butter .....	\$ 48,781,000	\$ 45,656,000
Factory Cheese (all types) .....	20,938,000	22,589,000
Ice Cream .....	18,861,000	18,383,000
Concentrated Milk Products .....	27,632,000	29,227,000
Fluid Sales .....	98,698,000	103,618,000
Miscellaneous Products .....	4,109,000	4,191,000
Farm Use and Sales .....	14,333,000	14,036,000
	<b>\$233,352,000</b>	<b>\$237,700,000</b>



5,492 million pounds of milk were produced in Ontario in 1956 compared with 5,543 million pounds in 1955, a decrease of less than one per cent.

Ontario produced 31.7% of the total Canadian milk production in 1956 compared with 32% in 1955.

Approximately 92.5% of the total milk production in Ontario is shipped to plants.

Milk (including cream converted to milk) received at plants was utilized as follows:

	1955	1956
Creamery Butter .....	38.2%	36.6%
Cheddar Cheese .....	12.7%	12.3%
Other Cheese (Whole Milk) .....	1.1%	1.3%
Fluid Milk .....	30.3%	31.4%
Fluid Cream .....	5.0%	5.4%
Condensed Whole Milk .....	0.6%	0.6%
Evaporated Whole Milk .....	5.1%	5.4%
Dry Whole Milk (including malted, baby foods, etc.) .....	2.8%	3.0%
Ice Cream .....	4.2%	4.0%

A little more than 18 per cent of the milk fat used in the manufacture of creamery butter goes into the plants as whole milk. The skim milk from this source, as well as that from the sweet cream trade, is used largely in the manufacture of dry skimmed milk, evaporated skim milk, condensed skim milk, cottage cheese and casein.

#### Federal Grading of Ontario Butter

	Total Lbs. Graded	% 1st Grade	% 2nd Grade	% 3rd Grade	% Below 3rd Grade	% Scoring 93 Points or Higher
1955	55,104,112	96.46	2.97	0.48	0.09	16.54
1956	55,421,352	97.43	2.23	0.27	0.07	20.00

For the ninth year in succession Ontario's butter quality improved over that of the previous year. The quality in 1956 was at an all time high, with a marked increase in high scoring butter over the previous year.

70 per cent of Ontario butter was graded in 1956, compared with 66 per cent the previous year, another all time high, indicating the increased interest of creamery operators in quality control.

#### Cream Quality

	% Special Grade	% First Grade	% Second Grade	% Off Grade (rejected cream)
1955	4.45	92.66	2.86	0.03
1956	4.94	92.83	2.19	0.04

A further trend was again noted in the decrease of undergrade cream. Second Grade Cream is not wanted by creamery operators. The majority discourage the production by paying from 3¢ to 20¢ (average about 10¢) per pound milk fat less for Second Grade Cream than for First Grade Cream. 57 creameries return Second Grade Cream to producers, an increase of 6 from 1955, and 112 creameries re-sell their Second Grade Cream to 8 other creameries.

## Creamery Statistical Summary

	1955	1956
Creameries operating .....	225	223
Former creameries which have reverted to cream receiving only .....	2	2
Cream Producers .....	58,451	53,708
Creameries making whey butter .....	25	21
Creameries also milk distributors .....	68	67
Creameries making butter only:		
(a) with no other associated business .....	41	39
(b) with no other associated dairy business .....	119	117
Average per cent cream self delivered by producers .....	35.4	37.7
Average per cent fat in cream from producers .....	32.9	33.0
Average price first grade butter (solids) .....	57.93¢	57.18¢
Average price first grade cream (milk fat net producer) .....	58.90¢	58.56¢
Approximate pounds butter made from milk to plants .....	15,275,000	14,525,000

## Buttermakers' Certificates Issued

	First Class	Second Class	Temporary	Beginner	Total
1955	201	4	-----	24	229
1956	209	2	-----	22	233

## Federal Grading of Edible Dry Skim Milk in Ontario

	Total Lbs. Graded	% First Grade	% Second Grade	% Below Second Grade
1955	26,604,900	93.9	3.2	2.9
1956	27,635,800	93.3	4.2	2.5

Ontario's dry skim milk powder quality, while very good, has remained fairly constant for the past several years.

There was a marked increase in the dry skim milk graded to 72% from 63% in the previous year.

## Processing Plant Statistical Summary

	1955	1956
Plants (including milk receiving stations) .....	127	154
Milk Producers .....	18,481	16,094
Average per cent fat in milk .....	3.52	3.57
Making dry milk .....	30	29
Making evaporated and condensed milk .....	16	15
Making ice cream mix and ice cream .....	83	100
Making casein .....	5	6
Average price evaporated milk per pound (case goods) .....	12.27¢	12.20¢
Average price dry whole milk per pound (spray process) .....	34.29¢	35.11¢
Average price dry skim milk per pound (spray process) .....	11.99¢	13.13¢
Average price dry skim milk per pound (roller process) .....	10.27¢	11.06¢
Average price dry skim milk per pound (animal feed) .....	7.58¢	7.85¢
Average price dried whey per pound .....	6.11¢	6.00¢
Average price dried buttermilk per pound .....	7.42¢	7.49¢
Average price casein per pound .....	21.00¢	23.40¢
Average price sweet cream per pound milk fat .....	80.43¢	79.67¢
Average price ice cream per gallon .....	\$1.51	\$1.50
Average price milk per 100 pounds at farm .....	\$2.31	\$2.41

## Federal Grading of Ontario Cheese

	<i>Number Boxes Graded</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Third Grade</i>	<i>% Below Third Grade</i>
Western Ontario .....	64,344	96.06	3.86	0.08	-----
Central Ontario .....	124,063	96.38	3.44	0.17	0.01
Eastern Ontario .....	378,286	95.71	4.12	0.15	0.02
Northern Ontario .....	2,446	95.83	4.13	0.04	-----
Total 1956 .....	569,139	95.90	3.94	0.14	0.02
Total 1955 .....	596,275	95.62	4.17	0.19	0.02

The Canadian government premium of 2¢ per pound for extraneous matter free cheese scoring 94 points or higher and a premium of one cent per pound for such cheese scoring 93 points was continued. The premium for high scoring cheese in 1956 averaged 0.91¢ per pound compared to 0.93¢ per pound in 1955.

The following is a summary of the quality scoring of Ontario cheddar cheese in 1955 and 1956. There was a slight movement into each of 2 higher scoring categories.

	<i>% 94 Score or higher</i>	<i>% 93 Score</i>	<i>% 92 Score</i>	<i>% Below 92 Score (under first grade)</i>
1955	34.11	39.31	22.20	4.38
1956	34.48	40.71	20.71	4.10

## Cheese Factory Statistical Summary

	1955	1956
Cheese Factories Operating .....	236	216
Milk Producers .....	13,672	15,124
Factories making Cheddar Cheese .....	226	202
Factories making Other Types of Cheese .....	27	32
Factories separating whey .....	232	201
Factories making Whey Butter .....	95	77
Average per cent fat in milk .....	3.31	3.32
Average pounds milk to make a pound of cheese .....	11.47	11.38
Average price per pound of cheese .....	29.44¢	32.67¢
Canada Quality Premium per Pound Cheese .....	0.93¢	0.90¢
Average price 100 pounds milk at the farm .....	\$2.11	\$2.43

## Cheesemakers' Certificates Issued

	<i>First Class</i>	<i>Second Class</i>	<i>Temporary</i>	<i>Beginner</i>	<i>Total</i>
1955	176	52	9	10	247
1956	158	40	12	12	218

## Butter Quality Improvement Competitions and Exhibition Butter

That an impetus is created through competitions to improve quality has been definitely demonstrated in the Ontario Butter Quality Improvement Competitions. Ever since these competitions were first started in 1945, Ontario butter has shown a steady improvement in quality. A new high in butter quality was established in 1956, the twelfth year of these competitions.

These competitions are sponsored by the Ontario Creamerymen's Association and are supported by The Ontario Cream Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board and several dairy equipment and



supply companies. Prizes and trophies awarded each year are valued at close to \$1,400.

The Milk Products Board supervises these competitions with the co-operation of the Department of Dairying, Ontario Agricultural College, and the Dairy Products Division, Marketing Service, Canada Department of Agriculture.

A record entry of 111 creameries participated. It is these creameries that inevitably produce the best butter in the province.

The Grand Champion and Runner-up in each of the four major competitions and the seven special competitions in 1956 were:

1. QUALITY:  
The Borden Company, Ltd., Belmont and Malcolm Condensing Company, St. George, tied  
General Milk Products of Canada, Brockville
2. YEAST AND MOULD:  
The Stirling Creamery Co., Stirling  
The Marshall Dairy Limited, Jarvis
3. WORKMANSHIP (Composition Control):  
Thompson Brothers, Mildmay  
Thompson Brothers, Teeswater
4. COMBINED QUALITY, YEAST AND MOULD AND WORKMANSHIP  
(all round efficiency and quality control):  
Stacey Brothers Limited, Mitchell  
Bruce Produce Company, Tara
5. CREAMERY MAKING THE MOST IMPROVED OVERALL SHOWING:  
Dresden Creamery, Dresden  
The Stirling Creamery Co., Stirling
6. NOVICE (Creameries which had not previously won a prize):  
Simcoe-Grey Creameries, Markdale  
Hanover Dairy Products Co-op., Hanover
7. HIGHEST SCORING BUTTER (Cream Receiving Creameries):  
Campbell's Dairy Products, Peterborough  
Canada Packers Limited, Fort Frances
8. HIGHEST SCORING BUTTER (Milk Receiving Creameries):  
Malcolm Condensing Company, St. George  
The Borden Company, Limited, Belmont
9. GREATEST INCREASE IN HIGH SCORING BUTTER  
(Cream Receiving Creameries):  
Canada Packers Limited, Shelburne  
United Co-operatives of Ontario, Renfrew
10. GREATEST INCREASE IN HIGH SCORING BUTTER  
(Milk Receiving Creameries)  
Stacey Brothers Limited, Mitchell  
New Dundee Co-operative Creamery, New Dundee

# 11. EXHIBITION BUTTER

(Creameries Winning Most Prizes at the C.N.E., Western Fair and Royal):

Briar's Dairy Limited, Sutton West

Silverwood Dairies Limited, Caledonia

Butter from Western Canada continued to dominate in both entries and prizes won at the three major exhibitions. The Ontario creameries which do exhibit butter made very creditable showings.

## Cheese Competitions and Exhibitions

Ontario cheesemakers dominated the entries in the competitive classes at the C.N.E., Western Fair, Ottawa Winter Fair, Royal, British Empire Cheese Show, Belleville and the Dairymen's Association of Western Ontario.

Many district fall fairs continue to hold competitive cheese classes for the immediate area.

The Mature Cheese Class at the Ottawa Winter Fair again created considerable interest. This competition sponsored by the Ontario Cheese Producers' Marketing Board was won by Max Frehner, Ava Food Products, Thamesford.

Entries from Ontario Cheesemakers at the British Dairy Farmers' Association Dairy Show held in the Olympia, London, England, and the Scottish Dairy Show, held in Glasgow, Scotland, again obtained a very excellent record. In the Dominions class at the former exhibition, Harold Montgomery, Farmers' Joy Cheese Factory, Monkland, placed first with David Dean, Island City Cheese Factory, Delta, second. At the Scottish Dairy Show there were 12 entries in the overseas class in which Ontario cheesemakers took the first 5 places. These winners were Murray Heath, Rylstone Cheese Factory, Campbellford; V. C. Flood, Plum Hollow Cheese Factory, Plum Hollow; T. S. Aicken, Blanshard and Nissouri Cheese Factory, Belton; Max Frehner, Ava Food Products, Thamesford, and Harold Montgomery, Farmers' Joy Cheese Factory, Monkland.

The major trophy winners in province-wide cheese competitions in 1956 were:

1. THE GARNET BAIN MEMORIAL TROPHY awarded to the Cheesemakers' Association or District whose members make the Highest Percentage of Extraneous Matter Free Cheese:

Western Ontario Cheesemakers' Association.

2. FRANK HERNS MEMORIAL TROPHY awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions:

T. S. Aicken, Blanshard and Nissouri Cheese and Butter Company Limited, Belton.

3. G. G. PUBLAW MEMORIAL TROPHY awarded to the cheesemaker with the Highest Rating for Plant Sanitation and Operation:

Roy Greenhorne, Oak Leaf Cheese Factory, Athens.

4. J. P. GRIFFEN MEMORIAL SHIELD awarded to the Cheesemakers' Association or District making the Highest Percentage of First Grade Cheese:

Central Ontario Cheesemakers' Association.

### Instruction, Inspection and Extension

The following is a summary of the activities of The Milk Products Board fieldmen in 1956:

No. of visits to plants .....	7,184
No. of cans of cream examined for quality .....	43,120
No. of cans of milk examined for quality .....	174,975
No. of cans of milk examined for sediment .....	71,439
No. of tests made on milk for bacterial activity .....	21,079
No. of fermentation tests made on cheese milk .....	6,996
No. of samples of milk checked for milk fat .....	12,138
No. of adjustments made .....	293
No. of samples of cream checked for milk fat .....	15,279
No. of adjustments made .....	730
No. of milk and cream cans examined for condition .....	94,517
No. of producers visited for quality and milk fat tests .....	1,472
No. of meetings attended .....	746

Dairy exhibits and demonstrations featured several district fall fairs, seed fairs, etc. These exhibits were sponsored mainly by local dairy producers' groups with The Milk Products Board fieldmen supervising.

Dairy Products Board fieldmen were prominent in the staging and in the judging at the Dairy Queen Milking Competitions held at the 1956 C.N.E. Other fieldmen coached the many competitors.

Quality, efficiency and other problems in milk and cream production were discussed by the field staff at numerous producer meetings.

There was continued interest on the part of Junior Farmers and 4-H Club members in quality milk production and the field staff co-operated with the county Agricultural Representatives on this subject.

Television and radio appearances were made by several members of the field staff. One member makes a 15-minute broadcast on dairying every 2 weeks.

### Instruction, Inspection and Extension

While the cream generally being received at creameries was of acceptable quality, the greatest problem confronting the field staff was to convince cream producers of the need for efficient cooling and raising the fat content of their cream to at least 35%.

More problems were encountered in cream testing than in the previous year. Most of the difficulty was in the care of the samples at the creamery.

The new regulations passed in November 1956 resulted in intensive concentration at some creameries in order that they might comply with the tare weight requirement on all cans, the keeping of proper plant records, etc.

Conditions in creameries generally were good, with considerable alterations and improvements being made.

In order to consolidate operations, 4 creameries reverted their plants to cream receiving stations and diverted the cream to larger creameries for more efficient manufacturing.

There was a more definite trend to better packaging of print butter. Two companies now package in quarter pounds and two companies are selling pre-cut butter patties to the hotel and restaurant trade.



Wooden equipment is fast disappearing from Ontario creameries.

Over 20% of the trucks gathering cream now have insulated van bodies but only about 10% of the milk trucks are so equipped. It is mandatory that all trucks hauling milk have insulated van bodies by January 1, 1960.

Operators of these trucks are high in their praises for them, in that they protect the milk and cream from extreme heat and freezing and from dust.

There was again improvement noted in the flavour and sediment content of milk.

The sediment quality of milk received at processing plants is indicated below.

<i>Grade</i>	<i>% A</i>	<i>% B</i>	<i>% C (warning)</i>	<i>% D (reject)</i>
1955	41.9	53.9	included in B	4.2
1956	45.6	48.7	3.6	2.1

Less than one per cent of the milk examined was rejected for flavour — of this amount about one third was rejected for being sour.

A number of plants are now making tests on the milk for bacterial activity. These tests will become mandatory after June 1, 1957. Preliminary checks on the bacterial activity quality of milk at processing plants indicate the following:

<i>Grade</i>	<i>% 1 Acceptable</i>	<i>% 2 Acceptable</i>	<i>% 3</i>	<i>% 4</i>
	76.6	10.9	11.4	1.1

Colouring of all rejected milk is now required by regulation. It is expected that this regulation will do much to improve milk quality.

More time is being spent by the field staff with producers discussing their problems, particularly in respect to quality and efficiency of milk and cream production.

The majority of the plants manufacturing ice cream mix and ice cream buy their basic products from other plants.

Six Buttermakers' Clubs operated in 1956.

#### Inspection and Extension at Cheese Factories

The field staff concentrated on the production of extraneous matter free cheese and their efforts at the factories and at the farms is bearing results. The fact that the Federal quality premium is only paid on cheese of acceptable extraneous matter tests has also increased the quality of extraneous matter free cheese.

The improvement noted in the extraneous matter content of Ontario cheese is most gratifying when it is recalled that in 1954 only 52.5% was possible. This increased to 71.5% in 1955 and to 82.3% in 1956.

Most of the poor extraneous matter tests came from less than a dozen factories.

A considerable amount of mechanical defects occurred in cheese at a few factories where the makers refused to accept the instructions given by the Board fieldmen.

The official approval of the use of starter made from low heat skim milk powder has resulted to date in less starter failures. Results to date with the use of this type of starter are excellent.

Many of the older factories are now closing, having allowed their plant and equipment to depreciate to a state where it was unprofitable to repair or

replace. New and larger and better-equipped plants are taking their place. Other factories are making many improvements to their buildings and equipment.

The trend to cheese varieties other than cheddar is increasing.

Milk quality at cheese factories is showing improvement. Where possible all producers of poor quality milk are visited by a member of the field staff.

Scarcity of help was noticeable in many factories in Eastern Ontario, mainly due to the more lucrative wages paid on the Seaway Development. The help factor has been responsible for lack of much follow-up work on quality control on milk on the part of the plant.

Less than one per cent of the milk received at cheese factories was rejected for flavour, with only a very small amount rejected for being sour.

The sediment grading of milk received at cheese factories is indicated as follows:

	<i>Grade</i>	<i>% A</i>	<i>% B</i>	<i>% C (warning)</i>	<i>% D (reject)</i>
1955		33.6	60.2	included with B	6.2
1956		36.1	49.6	10.3	4.0

Tests for bacterial activity were made at most factories by the field staff. The results of these tests on cheese factory milk in 1956 were as follows:

<i>Grade</i>	<i>% 1 (Acceptable)</i>	<i>% 2 (Acceptable)</i>	<i>% 3</i>	<i>% 4</i>
	66.3	19.4	9.6	4.7

Testing of milk for bacterial activity will be mandatory after June 1, 1957.

The colouring of rejected milk is expected to be an important factor in improving the quality of milk to cheese factories, particularly milk high in extraneous matter.

A number of cheese factories still have their milk fat testing done by itinerant testers and some also have their sediment testing done by the same persons.

Several Cheesemakers' Clubs were organized during 1956.

Most factory annual meetings are attended by a member of the field staff. At co-operatively owned plants, this provides an excellent opportunity to discuss with the members matters requiring attention in respect to the plants and their operation.

#### MILK CONTROL BOARD OF ONTARIO

Reference was made in last year's report to a few new developments which were instituted in the marketing of fluid milk.

#### Three Quart Glass Containers

These were introduced in the distribution of fluid milk in March, 1956, in the market of Aylmer, on a cash and carry basis of sales to consumers. These containers, which are spoken of as three quart jugs, have found acceptance in

other markets and are now being used, or about to be used, in Guelph. Hamilton, Ingersoll, Simcoe, St. Thomas, Tillsonburg and Toronto.

In the Toronto Market a licence has been issued to a new operator who has had considerable experience in the sale of milk in gallon jugs in the United States. He indicates that he will operate his own dairy and his own store outlets, which will specialize in the sale of milk in three quart jugs on a cash and carry basis. Existing distributors in the Toronto market report that plans are well under way to commence the distribution of three quart glass jugs to stores and supermarkets in the month of April.

### Bulk Milk Handling

Under this method of handling milk on the farm, the familiar eight gallon can has been replaced by a stainless steel tank installed in the farm milk-house, in which the milk is cooled immediately and stored at a temperature of 35° to 40°F., awaiting pick-up by the transport truck. The transport truck consists of a stainless steel tank into which the milk is pumped directly from the farm bulk tank and in which the milk is transported to the dairy. This method has made rapid progress, especially during the past year, as the following table indicates.

*GROWTH OF BULK METHOD OF HANDLING MILK*

<i>Market</i>	<i>Number of Dairies</i>		<i>Number of Bulk Transport</i>		<i>Number of Bulk Producers</i>	
	<i>Mar. 31/56</i>	<i>Mar. 31/57</i>	<i>Mar. 31/56</i>	<i>Mar. 31/57</i>	<i>Mar. 31/56</i>	<i>Mar. 31/57</i>
Aurora .....	1	2	2	3	38	55
Barrie .....	1	1	1	1	35	31
Bolton .....	---	1	---	1	---	7
Guelph .....	---	1	---	2	---	30
Hamilton .....	1	2	1	2	12	10
Ingersoll .....	---	1	---	1	---	8
Kitchener .....	1	1	1	1	32	36
London .....	---	1	---	1	---	27
Markham .....	---	1	---	1	---	8
Newmarket .....	---	1	---	1	---	8
Oshawa .....	1	3	2	5	29	95
Perth .....	1	---	1	---	5	---
Ottawa .....	---	1	---	1	---	26
St. Catharines .....	---	1	---	1	---	43
Smiths Falls .....	---	1	---	1	---	4
Toronto .....	7	12	11	39	292	952
Whitby .....	1	1	1	1	15	16
Woodstock .....	---	1	---	1	---	9
Totals .....	14	32	20	63	458	1,365

### Price Formula

The Price Formula which was recommended, after careful study, by a committee of agriculturists appointed by the Minister of Agriculture in 1951, for determining the price to be paid to producers of fluid milk, was incorporated into the



Collective Bargaining Agreements in a large number of markets in 1954 and in the intervening years. Under the terms of the Price Formula, the first change in the market price for milk became effective November 1, 1956, when the producer market price was increased by 19 cents per hundred pounds. The Price Formula provides that any change in the price paid producers will be in the amount of 19 cents or any multiple of 19 cents per hundred pounds. This change of 19 cents or multiple of 19 cents per hundred pounds is an automatic one when the factors in the Formula indicate an average change of this amount for three consecutive months. The following table records statistical data since the inception of the Price Formula.

### PRICE FORMULA CALCULATIONS

	Formula Price			Change in Price		
Month	Monthly	3 Months Average	Monthly Plus or Minus	3 Months Average Plus or Minus	Basic Price	
July '54	4.48	4.48				4.53
July '55	4.645	4.62	+ .115			4.53
Aug. '56	4.716	4.66	+ .186	+ .13		4.53
Sept. '56	4.7238	4.6955	+ .1938	+ .1655		4.53
Oct. '56	4.7463	4.7288	+ .2163	+ .1987		4.72
New Basic Price effective November 1, 1956 is \$4.72						
Nov. '56	4.8014	4.7571	+ .0814			4.72
Dec. '56	4.8268000	4.7915	+ .1068			4.72
Jan. '57	4.8444500	4.8242	+ .12445	+ .1042		4.72
Feb. '57	4.8570114	4.84275	+ .13701	+ .12275		4.72
Mar. '57	4.8601200	4.8538	+ .14010	+ .13385		4.72

### THE BOARD

Members holding office during the year:

Judge A. B. Currey, Chairman of the Board

Mr. K. M. Betzner, Member of the Board

Mr. J. L. Burrows, " " " "

Mr. H. E. McCallum, " " " "

### Meetings of the Board and Administrative Officer

For the period April 1, 1956 to March 31, 1957, meetings were held as follows:

(1) Meetings of the Board .....	28
(2) Public Hearings before the Board re maximum price .....	1
(3) Arbitrations re producer prices .....	4
(4) Administration Hearings before the Board .....	85
(5) Interviews with Administrator .....	114
(6) Administrator's Outside Calls and Field Meetings .....	147

*COLLECTIVE BARGAINING AGREEMENTS  
FIELD AND AWARDS*

<i>Fluid Milk Markets</i>	<i>C.B. Agreement</i>	<i>Producer Price per 100 lbs.</i>	<i>Formula Adopted</i>
Tweed .....	56-3	\$3.80	
La Salle .....	56-4	4.58	F
Cornwall .....	56-5	4.43	F
Kenora .....	56-6	4.75	
Blenheim .....	56-7	4.77	
Tilbury .....	56-8	4.77	
Strathroy .....	56-9	4.43	F
Hensall .....	56-10	4.17	
Kincardine .....	56-11	4.29	
Wheatley .....	56-12	4.77	
Tottenham .....	56-13	4.10	
Zurich .....	56-14	3.92	
Orangeville .....	56-15	4.43	
Uxbridge .....	56-16	4.40	
Sudbury-Copper Cliff and Levack .....	56-17	5.29	
Colborne .....	56-18	4.30	
Kapuskasing .....	56-19	5.36	
Norwood .....	56-20	3.79	
Madoc .....	56-21	3.89	
Dryden .....	56-22	5.20	
Port Perry .....	57-1	4.38	
Forest .....	57-2	4.49	
Gananoque .....	57-3	4.62	F
Palmerston .....	57-4	4.10	
Brighton .....	57-5	4.30	
Wellington .....	57-6	3.59	
Napanee .....	57-7	4.62	
Windsor (Transport) .....	57-8		
Matheson .....	57-9	5.24	
Belleville .....	57-10	4.55	F
Fergus .....	57-11	4.44	F
Sudbury-Copper Cliff and Levack .....	57-12	5.50	
St. George .....	57-13	4.62	
Blind River .....	57-14	5.56	F
Hastings .....	57-15	4.00	
London .....	57-16	4.62	F
Ailsa Craig .....	57-17	4.49	
Temiskaming Area .....	57-18	5.24	F
Ottawa (Transport) .....	57-19		
Kemptville .....	57-20	3.75	
Timmins .....	57-21	5.46	F
<i>AWARDS</i>			
Ottawa .....	57-1	4.77	F

### Consumer Prices

On November 1, the Board rescinded all maximum prices prescribed on home delivery of milk and on all store sales, except in the markets of Toronto, Hamilton, Ottawa, Windsor, London, Niagara Falls and St. Catharines where a store differential had been in effect. In these markets the maximum prices as prescribed apply to milk sold out of stores.

In the Toronto market a public hearing on maximum prices for milk sold out of stores was held and the Board prescribed a maximum price on quarts only of twenty-two cents per quart.

On November 1, when and where producer prices moved upward consumer prices were increased by one cent per quart.

#### Producer Prices

There are 116 markets where Control Board agreements include the Price Formula. In these markets the economic factors in the Price Formula brought about a price increase of 19 cents per hundred pounds of milk. Largely as a result of the producer price movement in Formula markets, increases in producer prices occurred in the majority of the few remaining markets not on Formula.

#### Bonding of Distributors

The Regulations provide that distributors shall furnish security, in the form of Government bonds or Surety bonds, for the protection of milk producers. During the fiscal year ending March 31, 1957, an amount of \$4,341,896.00 in the form of Government and Surety Company bonds was on deposit with the Board.

#### FIELD WORK

##### (a) Local Fieldmen

A local Fieldman during the year, Mr. J. M. Newitt, Fieldman for North-western Ontario, with headquarters at Port Arthur, resigned. Mr. Leslie T. Farquharson was appointed to the position of Fieldman with headquarters at the Department of Agriculture, Port Arthur, Ontario.

The local Fieldmen conducted periodic checking of the weighing, sampling and testing for butterfat of the producers' milk, the records respecting payments by distributors for milk supplied by producers and general supervision and enforcement of the Regulations, in their respective districts. Statistical data on the work performed is as follows:

#### APRIL 1, 1956 TO MARCH 31, 1957

Mileage travelled .....	110,251
Composite tests of milk checked .....	21,422
Number of fresh samples tested .....	1,273
Number of tests of retail products .....	3,377
Errors corrected .....	53
Value of Errors corrected .....	\$1,874.32
Routine reports on "Milk Receiving" .....	434
Routine reports on "Milk Payments" .....	1,636
Routine reports on "Producer-Distributors" .....	107
Miscellaneous Visits at farms .....	244
Miscellaneous Visits at plants .....	1,485
Miscellaneous Visits at others .....	398
Special complaints investigated .....	221



**(b) Head Office Fieldmen**

Two Fieldmen work out of Head Office, devoting the major part of their time to auditing payments to producers by distributors for milk supplied. In addition, a number of special investigations were made to secure information for the Board.

Statistical data on the work performed for the fiscal year ending March 31, 1957, is as follows:

*APRIL 1, 1956 TO MARCH 31, 1957***PAYMENTS AUDITS:**

Routine and Follow-up .....	484
Special Audits .....	22

**ERRORS CORRECTED:**

Number .....	23
Value .....	\$54,448.11

Investigations .....	69
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Special Plant Calls .....	381
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**MISCELLANEOUS CALLS:**

Farm .....	180
Producer Associations .....	73
Distributor Associations .....	15
Other Calls .....	158
Office Calls .....	173
Meetings with Fieldmen .....	38
Special Reports .....	70

Mileage Travelled .....	35,771
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**Enforcement**

It was necessary to take court action against only one distributor. In this case the distributor was charged for operating without a licence, contrary to The Milk Industry Act, 1954, and regulations made thereunder. A fine of \$25.00 and costs was imposed.

**Litigation**

The appeal by the Board to the Supreme Court of Canada, on the decision handed down by the Ontario Court of Appeal directing the Board to issue the licence to the applicant in question if the Board is satisfied with his qualifications, was withdrawn. As a result of this action, the Board is unable, under The Milk Industry Act, 1954, to refuse to grant a licence to an applicant who is qualified by experience, financial responsibility and equipment to properly conduct the proposed business.

## LICENCES ISSUED

<i>Year</i>	<i>Regular Distributor</i>	<i>Producer Distributor</i>	<i>Peddler</i>	<i>Milk Transporter</i>	<i>Milk Manufacturer</i>	<i>Shop-Keeper Distributor</i>	<i>Total</i>
1934	Not differentiated						1,335
1935	Not differentiated						1,624
1936	647	861	87	177	28		1,800
1937	750	924	87	205	32		1,998
1938	598	850	90	220	36		1,794
1939	607	590	150	235	38		1,620
1940	610	572	129	231	40		1,582
1941	635	490	116	230	40		1,511
1942	624	440	100	182	43		1,389
1943	610	452	125	181	43		1,411
1944	615	415	72	184	46		1,332
1945	624	389	76	239	46		1,374
1946	642	346	83	264	48		1,383
1947	641	237	83	233	55		1,299
1948	630	192	86	272	53		1,233
1949	603	154	75	273	51		1,156
1950	618	137	80	261	50		1,146
1951	582	119	74	259	48		1,082
1952	578	102	84	247	44		1,055
1953	558	84	99	247	43		1,031
1954	535	80	90	251			956
1955	530	73	59	260			922
1956	532	65	54	251		1	903

## FLUID MILK SALES (QUARTS) IN ONTARIO

<i>Year</i>	<i>Yearly</i>	<i>Average Monthly</i>	<i>Average Daily</i>
1938	240,465,400	20,038,783	658,809
1939	250,406,200	20,867,183	686,044
1940	269,203,700	22,433,641	737,544
1941	290,089,400	24,174,116	794,765
1942	325,159,100	27,096,591	881,107
1943	386,644,500	32,220,375	1,059,300
1944	409,964,000	34,163,666	1,121,499
1945	432,857,000	36,071,416	1,185,909
1946	467,736,000	38,978,000	1,281,468
1947	436,459,000	36,371,583	1,195,778
1948	424,100,000	35,341,666	1,161,917
1949	433,005,000	36,083,750	1,186,315
1950	433,950,200	36,162,516	1,188,904
1951	442,319,500	36,859,958	1,211,834
1952	442,886,611	36,907,217	1,213,388
1953	460,042,200	38,336,850	1,260,389
1954	477,221,800	39,768,483	1,307,457
1955	502,009,400	41,834,100	1,375,400
1956	513,407,625	42,783,968	1,711,358

(From Monthly Dairy Report, Ontario Department of Agriculture)

*COMMERCIAL SALES OF FLUID MILK,  
CREAM, CHOCOLATE DAIRY DRINK, AND BUTTERMILK  
IN ONTARIO, BY YEARS*

<i>Year</i>	<i>Fluid Milk Quarts</i>	<i>Fluid Cream Quarts</i>	<i>Chocolate Dairy Drink-Quarts</i>	<i>Buttermilk Quarts</i>	<i>Skim Milk Quarts</i>
1945	432,857,000	12,367,000	16,322,000	5,536,000	
1946	467,736,000	13,519,000	17,081,000	5,697,000	
1947	436,459,000	13,496,000	11,880,000	5,024,000	
1948	424,100,000	12,722,000	10,988,000	4,768,000	
1949	433,005,000	12,985,000	11,049,000	5,410,000	
1950	433,950,000	13,506,000	11,461,000	4,891,000	
1951	442,232,500	13,501,400	14,922,700	5,672,600	
1952	443,660,500	13,677,700	14,575,500	5,588,500	18,277,500
1953	460,042,200	14,714,300	13,848,600	6,501,200	20,740,400
1954	477,221,800	15,265,800	11,805,900	6,700,800	24,081,800
1955	502,009,400	16,068,200	14,428,500	8,006,200	27,662,100
1956	513,407,625	17,184,509	15,612,300	7,598,500	30,462,800

**International Association of Milk Control Agencies**

The Board was privileged to act as host for the 21st Annual Meeting of the International Association of Milk Control Agencies in Toronto on September 24, 25 and 26, under the Presidency of C. M. Meek, Administrative Officer of the Board.

Representatives, and in many cases their wives, were present from Milk Control Agencies of sixteen States, from the United States Department of Agriculture, Milk Boards in eight Provinces and the Milk Marketing Board of England, as well as representatives of the Ontario Whole Milk Producers' League, the Ontario Milk Distributors' Association, the Toronto Milk Transport Association and representatives of industries allied with the fluid milk industry.

Conference sessions were held on Monday and Wednesday in the Royal York Hotel, Toronto. On Tuesday, September 25, most of the delegates took in a Bus Field Trip to the farm of B. H. Bull & Sons, Brampton, The Dale Estate, Brampton, the Ontario Agricultural College and Macdonald Institute.

The Board acknowledges with thanks courtesies contributing to the success of the conference extended by the Ontario Whole Milk Producers' League, the Ontario Milk Distributors' Association, the Toronto Milk Transport Association, the Ontario Department of Agriculture, the Ontario Agricultural College and Macdonald Institute.



## *Field Crops Branch*

### GENERAL CROP CONDITIONS

Spring weather conditions were the most backward in many years. Several heavy frosts during the latter half of May caused considerable damage. By June 8 only about 80% of spring grain area had been seeded in Southwestern Ontario; about 65% in Central Ontario; 50% in Eastern Ontario, and only a small percentage in Northern Ontario. Pastures were considerably below normal, and growth of hay crops was slow. Excessive rains and cool weather seriously hampered haying operations, resulting in poor quality roughage, lodging of cereals, slow growth of corn and soybeans. Harvesting of early potatoes was fully one month later than normal. By August, crop conditions in general had shown improvement, with weather ideal for rapid development of the oat crop, much of which had been seeded extremely late. Severe infection of late blight on potatoes was widespread and caused much concern. By this time sugar beets were making good growth, although only 14,220 acres had been seeded, compared to 23,568 acres in 1954.

Quality in grain and hay crops was below average and lowered the feeding value. Acreage seeded had been reduced substantially, with grain crops, including fall wheat seeded the previous fall, estimated at 4,219,000 acres for 1956 as compared to 4,504,000 acres in 1955 and 4,599,000 acres in 1954. The largest decrease was in mixed grains, which declined from 1,120,000 to 950,000 acres. Corn for grain showed a decrease of 70,000 acres; oats, 78,000 and barley, 12,000. The total production of grain crops, however, was finally estimated at 169,587,000 bushels as compared to 181,284,000 bushels the previous year. Acreage and production of corn for ensilage was up more than 100,000 tons.

Total farm value of field crops in Ontario for 1956 was \$309,974,000.

### Seed Cleaning Plants

Some 435 seed cleaning plants were licensed, as compared to 453 the previous year. Grants up to \$250.00, which were available since 1931 for establishment or improvement of seed cleaning plants, were discontinued in 1956. As a replacement, a member was added to the Field Crops staff, with direct responsibility to inspect seed cleaning plants coupled with a year 'round programme of services, education and extension.

The following is a summary of the seed cleaning plant situation based on a survey comprising 213 plants:

The seed cleaning plants in Ontario may be classified into four groups, as follows:

1. Those owned and operated by individual farmers;
2. Those owned by a syndicate of farmers and operated by one member of a syndicate;
3. Those owned by a feed mill company and operated as a secondary enterprise;
4. Those owned and operated by a seed company as a single enterprise; i.e., purchasing, processing and marketing of seed provide all the income.

In order to rate a plant as being "excellent" it must have adequate lighting and be kept clean and tidy at all times. It is also essential that there be adequate space available for seed cleaning operations. Along with the preceding main factors, the following points are also considered:

1. Screen supply.
2. Clean-out of elevators and hoppers.
3. Dust disposal system.
4. Arrangement of cleaning equipment.
5. Method of weed seed disposal.
6. Type of flooring for seed cleaning area.
7. Adaptability of machines to cleaning operations.

The other ratings are decided upon by assessing the plants according to the above factors.

#### Plant Ratings

<i>Rating</i>	<i>Number of Plants</i>	<i>Per cent of Total</i>
Excellent .....	38	18
Good .....	98	46
Fair .....	47	22
Poor .....	30	14
	<hr/> 213	<hr/> 100

#### Air and Screen Cleaners Screen Supply

Average number of screens per plant .....	34
Lowest number of screens per plant .....	6
Highest number of screens per plant .....	164

#### Methods of Weed Seed Disposal

Number of plants that market weed seeds as feed .....	14, or 6%
Number of plants that return weed seeds to farmers ....	76, or 36%
Number of plants that destroy weed seeds by burning ....	123, or 58%
	<hr/> 213, or 100%

From the above table it will be noted that too many cleaning plant operators are ignoring their responsibility of destroying weed seeds. Farmers are as much at fault because they insist upon taking home from a cleaning plant the same weight of seed as they leave to be cleaned. Screenings that have feed value should be finely ground in the cleaning plant or run through a good hammer mill with a fine screen at the farm. Screenings should never be fed unground to livestock or poultry.

#### Finishing Machines

Number of plants with grading machine .....	116, or 55%
Number of plants without grading machine .....	97, or 45%
	<hr/> 213, or 100%

Of the 116 plants with special equipment, 59% have disc graders, 15% have indented cylinder graders, and the remaining 26% own other types of machines. The types of machines included in the 26% are: gravity table separators, timothy bump mills, velvet roll mills, buckhorn machines, spiral gravity separators and others. These special or finishing machines are used mainly for grading registered grains and cleaning small seeds.

#### Treating Cereals for Seed Borne Disease

Number of plants that are treating grain .....	112, or 55%
Number of plants that are not treating grain .....	90, or 45%
	<hr/>
	202, or 100%

Although only 55% of plants visited have treating equipment, the total business done by these plants is well above the average. It is estimated that of all cereal seeds cleaned in seed cleaning plants 80% is treated.

#### Number of Farmers Served per Plant

Each operator was asked to give a rough estimate of the number of farmers served by him each year. From this information is derived an average of 140 farmers per plant. This figure includes 160 plants, and it does not include the specialized plants, since they clean seed that has been rough cleaned by smaller plants.

#### AGRICULTURAL LIMESTONE ASSISTANCE POLICY

In order that ground limestone may be made available to farmers at reasonable cost, the Ontario Department of Agriculture, in co-operation with the railways and the Dominion Department of Agriculture, agreed to continue reduction of freight rates or trucking charges on ground limestone for use on the soil to correct soil acidity. The policy was revised, with new rates effective May 1, 1956, as follows:

##### Rail Transportation

1. The railway companies agreed to reduce the standard freight tariff by approximately 25%.
2. The Ontario Department of Agriculture, co-operating with the Canada Department of Agriculture, further reduced the cost to the farmer by paying:
  - (a) Muskoka and Parry Sound, including North Bay in Nipissing and Rutter in Sudbury, \$2.00;
  - (b) Nipissing and Sudbury other than Rutter and North Bay, \$2.50;
  - (c) Thunder Bay, Temiskaming, Manitoulin, Cochrane and Algoma, \$3.00;
  - (d) Rainy River and Kenora, \$4.00.

##### Transportation by Truck

1. The Department of Agriculture will assist in the payment of transportation on ground limestone by truck from the approved quarry to the farm or distributing centre in areas where transportation by rail is not convenient or economical, at the rate of four cents per ton per mile to a maximum grant of \$1.50 per ton.



2. Northern Ontario: from local approved sources, if any, four cents per ton per mile up to two dollars; from approved sources in Old Ontario to Northern Ontario points, four cents per ton per mile up to a maximum of fifty cents less than the maximum indicated for rail shipment.

During the year, 244 carloads of agricultural limestone, containing 11,062 tons, were moved under the subsidy assistance programme. In addition, 19,085 tons were moved by truck, bringing total tonnage to 30,147.

This compares with 40,515 tons for the previous year and a record high of 51,941 tons in 1953.

Most tonnage was applied in Kent County, with 4,932, followed by Lincoln with 2,387 and Welland with 2,236. Others over 1,000 tons, in order of volume, are Middlesex, Prescott, Wentworth, Sudbury, Parry Sound, Elgin, Russell, Essex and Brant.

All applications for freight assistance on lime are processed by the Field Crops Branch, and statements of claim are prepared and presented to Ottawa for the Federal share.

#### SEED DRILL SURVEY

Each year since 1947 a seed drill survey has been organized. Results are as follows:

##### COMMERCIAL SEED GRADES BASED ON WEED SEED CONTENT

Year	Location	No. Samples	All Samples		Cereals		Small Seeds	
			% No. 1	% Rej.	% No. 1	% Rej.	% No. 1	% Rej.
1947	22 counties Old Ontario	973	32	42	33	43	25	30
1948	17 counties N and W Ontario	988	39	30	42	36	24	30
1950	10 counties Central Ontario	547	58	21	65	21	37	23
1951	10 counties W. C. Ontario	620	48	23	53	22	27	28
1952	14 counties W and SW Ontario	372	47	23	50	22	34	27
1953	14 counties E. Ontario	1102	41	37	41	42	41	23
1954	10 counties N and C Ontario	696	53	24	56	24	46	23
1955	11 counties W and SW Ontario	706	59	20	63	19	46	22
1956	5 districts N Ontario	289	53	25	60	22	40	29
1956	Huron County	279	52	20	57	19	42	24

#### Seed Drill Survey (Huron County) 1956

For the first time in Ontario, Soil and Crop Improvement Association directors conducted a survey and collected samples from about five percent of the farms in a county. This permitted representative samples from each of Huron County's sixteen

townships. It also provided an opportunity to check on the accuracy of results from the smaller number of samples normally collected by county weed inspectors in conducting a seed drill survey.

TABLE I 1956 HURON COUNTY SEED DRILL SURVEY COMPARISONS

Year	No. Samples	Commercial Grades		Cereals Treated	Grade Unknown by Farmer		Free of Weed Seeds	No. Species of Weeds Found in	
		No. 1	Rej.		Cereals	Small Seeds		Cereals	Small Seeds
1948	79	29%	34%	68%	-----	-----	-----	---	---
1952	61	44%	28%	75%	-----	-----	-----	---	---
1955	75	55%	17%	64%	100%	64%	11%	27	30
1956	279	52%	20%	84%	79%	65%	15%	33	65

The first observation is the steady improvement in seed grade since these surveys were carried out. The second is the close agreement in results between the 1955 survey conducted by the county weed inspector and the much larger sample collected by the Soil and Crop Improvement Association directors of Huron County.

This survey showed that 8% of the farmers were sowing registered grain; 1% certified and 12% commercial. Small seeds were reported as 4% registered; 8% certified and 23% commercial. Cereal samples were made up of 50% mixed grain, 40% oats and 10% barley. Rodney was by large odds the most common variety of oats, making up 41% of the oat samples. Beaver was second most popular (14%), and the remaining 45% was made up of nine other varieties. Montcalm was still the most popular barley. Cereal seed treatment was made up of 40% Panogen; 24% Formaldehyde; 10% Ceresan; 3% other chemicals, and only 16% of the cereal samples were untreated for disease.

In some respects, the prohibited noxious field bindweed is the worst weed in Huron County. It was present in almost five percent of the cereal samples collected.

Germination reports indicated that 90% of the cereal samples graded No. 1, while small seeds were of lower germination, only 75% qualifying No. 1.

In comparing the reports from Huron County and Northern Ontario, the following comparisons may be of interest:

Huron County — 679,000 acres cleared land; 18 seed cleaning plants; 97 registered seed growers;

Northern Ontario (five districts) — 407,000 acres cleared land; 25 seed cleaning plants; 53 registered seed growers.

#### Northern Ontario Seed Drill Survey (1956)

Results from the five districts' samples vary widely but probably give a fair picture of seed quality for Northern Ontario.

TABLE II 1956 NORTHERN ONTARIO SEED DRILL SURVEY COMPARISONS

District	No. Samples	Commercial Grades		Cereals Treated	Grade Unknown by Farmers		Free of Weed Seeds	No. Species of Weeds found in	
		No. 1	Rej.		Cereals	Small Seeds		Cereals	Small Seeds
Manitoulin ---	43	68%	10%	52%	83%	86%	33%	13	28
Rainy River	74	38%	14%	6%	73%	88%	12%	23	33
Sudbury -----	59	51%	30%	26%	92%	76%	20%	28	31
Temiskaming	68	49%	31%	15%	82%	100%	15%	21	28
Thunder Bay	45	71%	7%	10%	50%	73%	15%	14	23
N. Ontario ---	289	53%	25%	19%	78%	86%	18%	36	63

Composition of the cereal samples in the Northern districts was made up of oats 77%; 11% mixed grain; 7% barley and 5% wheat. Ajax (40%) was the most popular oat variety, followed by Rodney (23%). Only 19% of the cereal samples were treated for disease.

### Ontario Seed Drill Survey Summary 1947-1956

It would appear that quality of seed has improved over the period reported. However, the results of the 1950 survey appear about the same or better than any later survey. Possibly a peak standard of about 60% No. 1 grade and 20% rejected has been reached. Increased use of the services of seed cleaning plants by farmers could presumably increase the standard of cereal grades up to about 85% No. 1 or better. Commercial seed companies in the last few years have made marked progress in acquainting the farmer with the importance of knowing what varieties and species of seed are available and most suited to his needs.

### ROYAL AND INTERNATIONAL SEED SHOWS

Forty-nine seed growers from Ontario won prizes at the 1956 International Grain and Hay Show, Chicago. The Ontario Department of Agriculture paid a special prize of fifteen dollars to each winner of a first prize, and five dollars to the top prize winner from Ontario other than first. Arrangements were also made for collection of exhibits and payment of shipping charges. Championship winners were as follows:

Field Peas .....	Roy Goltz, Falkenburg
Soybeans .....	Wm. R. Beattie, Staples.

A total of 335 prizes for field crops was won by Ontario farmers at the 1956 Royal Winter Fair. Championships were as follows:

#### WORLD CHAMPIONSHIPS

Rye .....	Harry Gorsline, Demorestville
Soybeans .....	Wm. R. Beattie, Staples

#### CHAMPIONSHIPS

Field Beans .....	Harry Gorsline, Demorestville
Winter Wheat .....	John Cruickshank, Hampton
Barley .....	John Hagarty & Son, Alma
Hay .....	L. R. Bostwick, Wheatley
Turnips .....	George Murison, Markham

#### RESERVE CHAMPIONSHIPS

Field Beans .....	Howard R. Ferguson, North Augusta
Corn .....	Ralph Moore & Sons, Norwich
Hay .....	Edgar Ridge Farm, Milliken
Soybeans .....	J. A. Armstrong & Sons, Union
Potatoes .....	Gabriel Kolomeitz, Dunning

Canadian Horticultural Council diploma for most outstanding display —  
Ontario Potato Growers' Association.

### ONTARIO SOIL AND CROP IMPROVEMENT ASSOCIATION

Interest in the work of the Soil and Crop Improvement Association continues unabated. There are fifty-five branches, or one in each agricultural representative district, which is the maximum number that can be organized. Each branch has its



slate of enthusiastic, public spirited officers. In 1956 some 1,100 co-operators carried on 660 projects, exclusive of group projects such as meetings, tours, field days, yield competitions, etc.

### Field Demonstrations

Managed pastures — fifty-four branches participated. Results indicate the value.

In Halton County a managed pasture seeded in 1955 produced in 1956, 4,272 lbs. of Jersey milk per acre; also carried some dry stock plus some hay, to a total value of \$215.41 per acre. A similar pasture in Haldimand produced 4,416 lbs. of milk per acre, and one in Norfolk, 3,197 lbs. of milk. Halton County also found that seeding a nurse crop at two bushels per acre produced 3,150 lbs. of hay the next year, whereas seeding a nurse crop at one bushel per acre produced 4,500 lbs. of hay the following year, or an increase of 1,350 lbs.

These managed pastures also show the value of pasturing the nurse crop rather than harvesting it as grain.

### Variety of Projects

The following illustrations will serve to show the great variety of projects:

Lennox and Addington sponsored a Farm Business Management Group. Rainy River conducted a three-ton-per-acre contest. In 1955 Renfrew County sprayed a six-acre field almost solid with bindweed with 24 ounces of 2,4-D ester at time of bloom. Two weeks later the field was disc ploughed and left to dry out in the hot sun. The field was worked in August and later seeded to Rideau wheat, which in 1956 yielded 400 bushels, or almost 67 bushels per acre.

For years York County has had a rust problem, and realizing the value of rust resistant varieties, Agricultural Representative Cockburn and his Soil and Crop Improvement Association staged a real promotion programme for Garry and Rodney oats. As a result, eleven cars of Rodney and two cars of Garry were purchased by York farmers in the spring of 1956. It is estimated that the increased yield of these oats had a value of \$250,000 to York farmers in one year.

The combined Eastern Ontario branches had an excellent three-day convention at Kemptville. York County probably had the largest annual meeting, with 368 for noon lunch, over 400 at the annual meeting, and about 380 members signed up for 1957. Middlesex had the largest twilight tour.

### Field Days and Tours

Many branches now operate bus tours, sometimes within the county, or to a neighbouring county or a section of Ontario, a nearby state or neighbouring province.

For the second successive year, a goodwill tour was organized, this time to the Maritime Provinces. One hundred and twenty men and women made the trip in a nine-car special train, supplemented by extensive bus tours. Stops were made at Cornwall, New Brunswick, Nova Scotia, Prince Edward Island, Quebec City and Montreal. The party was greeted with the most sincere and generous hospitality by the three Maritime Provinces.

### Committees

Committees of seed growers continue to issue recommended minimum prices for seed grain and function with the Canadian Seed Growers' Association by taking responsibility for allocation of available supplies of foundation seed. More elite growers are still needed in Ontario.

The Potato Committee has had an active year, working in close harmony with the Potato Growers' Association. Last winter a market survey was made and high yield competitions, potato banquets, and fertility and variety demonstrations, along with equipment demonstrations, served to bring out new information and develop interest in potato growing. New size grades for potatoes became effective on September 18.

Practically all table turnips are of the Laurentian variety. Much of the seed used is graded and treated according to the recommendations of the Turnip Committee of the Ontario Soil and Crop Improvement Association.

### Seed Fairs

Number of Seed Fairs .....	33
Total Prize Money Paid .....	\$10,243.64
Total Exhibitors .....	1,342
Total Entries .....	3,919
Total Attendance .....	20,442
Cereal Seed Offered for Sale .....	60,202
Forage Seed Offered for Sale .....	13,815
Potatoes Offered for Sale .....	14,680
Other Seeds .....	2,368

In addition, three district seed shows were held, accounting for another 1,000 entries.

### High Yield Clubs, 1956

Nine 500 Bushel Potato Clubs were organized, with a total of 130 contestants. Arthur Budarick, Palmer Rapids, had the highest yield, with 865 bushels per acre of the Green Mountain variety. The Cochrane club, with ten entries, had the highest club yield of 516 bushels per acre.

There were fifty-seven contestants in four zones in the High Yield Soybean Competition, as compared to seventy in 1955. The prize winners in the Championship competition were: first, Duncan J. McEachern, Glencoe; second, Douglas Edgar, Alvinston; third, Donald Stewart, Mount Brydges.

Promotion in malting barley changed from a special malting barley class at seed shows to a field competition. There were fifty entries. Prize money amounting to five hundred dollars, provided by the Canadian Barley Improvement Institute, was awarded to ten prize winners in each of two districts. The Provincial Championship awards were made, with the samples on display at the O.S.C.I.A. Convention. Prizes in the Championship class are: first, \$250.00; second, \$150.00, third, \$100.00.

### Trophies and Awards

The Soil and Crop Improvement Association is pleased to offer each year the following trophies for the encouragement of young men in field crop work:

4-H Grain Club Challenge Trophy (Ontario Championship).

4-H Potato Club Challenge Trophy (Ontario Championship).

Championship Trophy Agronomy Section, Western Ontario Agricultural School Review Day.

Silver Tray Championship in Agronomy, O.A.C. College Royal.

### Affiliations

The Soil and Crop Improvement Association enjoys representation on the Ontario Conservation Council, the Ontario Federation of Agriculture, the Canadian Horticultural Council, the Advisory Fertilizer Board for Ontario, the Beef Pasture Improvement Committee, the Foundation Seed Distribution and other important committees.

### Branch Finances

Provincial grants to branches in 1955 averaged \$359.71. The average expenditure for each branch for 1955 was \$1,172.73. On this basis, for each dollar paid to branches in the form of government grant, the branches actually raised and spent on project work \$3.20.

### Pedigreed Seed

Great credit is due plant breeders generally for their excellent work in developing new disease resistant high yielding varieties. Never before have Ontario farmers had such a good selection of varieties, particularly in oats, barley, wheat, rye, soybeans and corn. Garry oats will out-yield the old reliables such as Beaver and Ajax by ten bushels per acre. Brant barley (feeding) will out-yield all other varieties by ten bushels, and Tetra Petkus rye on a field basis has yielded up to eighty bushels per acre in Ontario.

The Field Crops Branch published two lists of seed for sale; one for fall sown crops, including 40,000 bushels of wheat, rye and winter barley, and one for spring sown crops, including 215,000 bushels of oats, barley, flax, soybeans and spring wheat.

There are 1,670 C.S.G.A. members in Ontario, not including associates. This is believed to be the highest membership for any province and an all time high for Ontario in both membership and in the number of fields inspected. This is an increase of about 250% since 1952.

### POTATOES

More Ontario potatoes went into direct consumption for two or three months at harvesting time last fall than ever before in history. Quality was excellent and the demand good. Digging of the early crop was three weeks to a month later than usual, and last diggings crowded marketings of intermediate crops across the Province.

A severe epidemic of late blight caused much concern in August and early September. Fortunately, top-killing by chemicals was generally used.



The 1956 growing season will go down in history as the year of high quality potatoes in Ontario. Scab was not too much of a problem, as in former years, due largely to cool, moist conditions.

During the year the Ontario Potato Growers' Association Directors arranged four meetings, in addition to the annual meeting in January and the crop tour to Southwestern Ontario in July. The Association was also represented at various meetings of the Ontario Federation of Agriculture and the Canadian Horticultural Council. Seventeen local units are affiliated with the Provincial group.

The new grade standards were approved and included in the Farm Products Grades and Sales Act, effective September 18, 1956. This not only fits in more suitably with the Canadian standard for No. 1 grade, but it will improve the grade by more uniformity of size. At the same time a suitable grade has been established for No. 1 small and this grade is proving popular. An advanced step was also taken when size requirements for No. 2 grade were put on the same basis as No. 1.

A Foundation Seed Distribution Committee was implemented and will function to advantage in allocating available supplies on an equitable basis of new varieties, such as Huron, which will be distributed for planting in 1957.

Upon recommendation of the Directors, an inspector was placed in Eastern Ontario by the Department. One central meeting and two district meetings were very successfully held in Eastern Ontario, resulting in organization of Nation Valley and Ottawa Valley locals. This organization was represented at the Potato Utilization Conference in Maine early in August. Attention was given to completing and preparation of a final report on the market survey indicated in 1955-1956; also a master brief on all phases of the potato industry in Ontario. While some new branches have been organized, there are some local ones which are not very active.

For the first time, a booth was set up at the Royal Winter Fair in 1956. Samples were collected from various packers across the Province.

### Consumer Package Display

A consumers' package potato display was staged at the time of the annual meeting of the Ontario Soil and Crop Improvement Association. Eighty-six 10-lb. packages of potatoes were collected at random from stores across the Province from Ottawa to Windsor to Cochrane, by inspectors of the Fruit Branch. Of these, 71 were from Ontario, 10 from P.E.I., and 5 from New Brunswick. These were graded, scored by a panel of inspectors, and later displayed in the following categories:

	<i>From Ontario</i>	<i>%</i>	<i>From P.E.I.</i>	<i>From N.B.</i>
Excellent .....	10	16.1	1	—
Good .....	10	16.1	—	2
Worthy .....	14	22.6	2	—
Unworthy .....	28	45.2	1	2

Sixteen were underweight and were disqualified. 9 were from Ontario, 4 from P.E.I., and 1 from New Brunswick. Two were Maritime potatoes packed in Ontario. These were below weight, from 2½ to 12 ounces. Those in the "Excellent" class received a Certificate of Merit in addition to a red ribbon. Ribbons were also provided for "Good" and "Worthy". Each grower or packer was later informed of his own score.

### Bacterial Ring Rot Survey

Since 1943 a service has been provided to commercial potato growers by way of inspection of their fields for bacterial ring rot. After a very thorough coverage of concentrated potato producing areas, 89 positive cases, involving 622 (in twelve counties) infected acres were found. This compared with a high of 673 cases and 3,640 acres in 1946.

### High Yield Clubs

Nine clubs were organized, with 130 competitors. Average yield was 397 bushels per acre, with fifteen over 500 bushels per acre. Largest group was Middlesex with twenty-two entries. Seven of the nine clubs based their awards on both quality and yield.

### CANADIAN FORAGE SEED PROJECT

The multiplication of pedigreed forage seeds under the Canadian Forage Seed Project continues to make some progress, although 1956 was a poor forage seed year all across Canada.

Foundation seed is placed with qualified growers under contract. In the spring of 1957 the following quantities of this contract seed were sold to other growers in Ontario for further multiplication, first to registered and then to certified seed:

Climax timothy .....	11,784 lbs.
Lasalle red clover .....	2,300 lbs.
Vernal alfalfa .....	60 lbs.

The following foundation stocks were distributed in Ontario to be grown under contract:

Climax timothy .....	290 lbs.
Lasalle red clover .....	145 lbs.
Rambler alfalfa .....	75 lbs.

In order to saturate a whole area with Climax timothy seed and thus overcome serious isolation problems, a group of some sixty farmers in the Moose Creek area voluntarily agreed to seed only pedigreed Climax timothy. Out of this area alone, about 125,000 pounds, mostly certified grade, were sold this year. So far, the demand far exceeds the supply, and certified Climax sells at nearly double the price of common timothy.

### ONTARIO WEED CONTROL PROGRAMME

Weed control measures, both cultural and chemical, have kept pace very favourably during the 1956 season. A late spring, excessive moisture and late harvest did not present ideal conditions for crop spraying, row crop cultivation or after harvest cultivation. However the acreage of spraying accomplished on farms this year shows only a slight reduction.

The condition of roadsides is showing marked improvement. Mileage reported sprayed is slightly lower this year for township and county roads, but mileage of roads mowed is considerably increased. This suggests a trend reported by some municipalities after several years of continuous roadside spraying to reduce their activities to spot spraying and trimming the road shoulder with the mower. There is still room for expanded use of herbicides on roadsides, since many municipalities are spraying only five to ten miles a year and some not at all.

No municipalities report eradication to the point where spraying can be discontinued indefinitely, though several are now on a programme whereby they spray only

every second year. Several municipalities reported unsatisfactory results with control of milkweed and wild carrot. Damage claims were few, involving crops of tomatoes and soybeans allegedly damaged by spray drift.

### Use of Herbicides

#### (a) FARMS:

cereal grains .....	195,000 acres
corn .....	75,000 acres
pasture .....	15,500 acres
vegetables and small fruits .....	9,000 acres
peas .....	650 acres
fence lines .....	3,000 acres

#### (b) ROADSIDES:

provincial highways .....	9,000 miles
county roads .....	5,000 miles
township roads .....	16,500 miles

Approximately 30% of township roads and 40% of all county roads were sprayed for weed control. In addition to spraying, over 17,500 miles of township roads and 7,500 miles of county roads were mowed on shoulders.

### Special Programmes

#### (a) Barberry and Buckthorn:

Fourteen counties are participating in a programme of eradication of barberry and buckthorn. Under this policy 50% of the money expended up to \$400.00 per county per year is provided by the Department. Methods used successfully are:

1. basal bark treatment
2. dry sodium chlorate treatment
3. stump treatment
4. bulldozer.

#### (b) Leafy Spurge:

Three counties are participating in a leafy spurge control programme, the basis of which is assistance to a county of up to \$250.00 per year, the amount not to exceed 25% of the money expended for control of leafy spurge. Assistance is usually given to property owners in the form of a subsidy on herbicides used in treatment of leafy spurge. Materials used for this purpose are 2,4-D and 2,4-D/2,4,5-T mixtures. Experimentally, CMU, polybor chlorates and amino triazole have been used. So far, repeated treatments with from one to two pounds of 2,4-D or brushkill have been most successful for large scale treatments. Economics do not favour the higher cost materials when repeated treatments are necessary. So far, eliminating spurge with a one-shot treatment has not been successful.

### Press Releases

The Weed of the Week series ran May through August. This series consisted of twenty-one articles (one each week) dealing with the most timely weed or weed problem, including description, importance and control. It has become a summer feature in many local newspapers throughout the Province. This year from Canadian press clipping service 310 feet of single column space was returned. In addition, this material was used on local radio stations. Time was also devoted to weed control on the farm programmes of some television stations.



### Meetings

Weed control conferences were held at Toronto, Kemptville and Guelph. The Toronto meeting was planned for weed inspectors. The Kemptville and Guelph meetings included farmers, road officials and manufacturers and distributors of weed control supplies and equipment. Additional county meetings were held for the purpose of demonstrating proper spraying methods and discussing local problems.

### Exhibits

Displays at county fairs, seed fairs and ploughing matches are put on and staffed by county weed inspectors. At the Sportsmen's Show in Toronto the Department of Agriculture exhibit featured ragweed and poison ivy.

### Legislation and Administration

The Weed Control Act provides for destruction of all noxious weeds as often as necessary to prevent their ripening seed. Thirty-two weeds are classed as noxious, and included in this list are common barberry and European buckthorn. The Act provides for an inspection staff, which in 1956 consisted of 47 county weed inspectors, 115 municipal weed inspectors in Northern Ontario, 450 municipal inspectors in Southern Ontario, and 10 district inspectors. The Weed Control Act depends on the efficiency of the inspectors, and progress is being made in roadside weed control, in eradication of barberry and buckthorn, and in farm weed control, as evidenced by the expanded use of chemicals.

### Ragweed and Poison Ivy Control

Efforts are continuing to maintain Northern Ontario resort areas free from ragweed, and most areas of the Northland are recommended for hay fever sufferers. In Southern Ontario control measures are complicated by the presence of the weed on farmlands, railway property and building developments. The support of service clubs, Chambers of Commerce and other groups is most encouraging in the campaign against ragweed and poison ivy.

### Affiliations

Branch members participate in provincial and national boards and organizations as follows:

- Ontario Soil and Crop Improvement Association — secretary.
- Conservation Council of Ontario — member.
- Ontario Potato Growers' Association — secretary.
- Canadian Horticultural Council — member.
- Canadian Seed Growers' Association — executive.
- National Weed Committee (Eastern Section) — past president.
- Canadian Forage Seed Project — member.

### Staff Changes

Douglas Kerr, B.S.A., resigned on May 4, 1956, as Fieldman for Niagara District with headquarters at Brantford to join a commercial seed firm. Howard Henry, B.S.A., was appointed May 22, 1956, as Fieldman to take over the area. On May 1, 1956, John Manuel was appointed as Fieldman with headquarters at Ontario Agricultural College, Guelph, to devote his time to extension and inspection of seed cleaning plants. In July, 1956, Miss Betty Noble replaced Miss Lois Morrison on the secretarial staff.

## *Farm Economics*

The continuing expansion of Canadian national economy is continuing to necessitate rapid and major adjustments in the management of Ontario farms. The business aspects of these adjustments are of paramount importance. High overhead costs for mortgage interest, machinery financing and taxes, together with high operating costs for labour, fertilizer, fuel, repairs, etc., have created farm business problems on a scale that was unknown to earlier farm operators.

The Farm Economics Branch is concerned with these farm business problems and with the changes in farm management required to solve them. The duty of the Branch is to study all phases of agricultural production and marketing, and to obtain basic information which will be of assistance in finding a solution to these problems as they arise. The findings of these studies are made available to other government departments, to farm organizations, to farm operators, and to the general public.

The Branch was organized in 1948, and since then its work has covered a wide field. Studies of production costs and farm management practices have included many of the major crops and livestock produced in the Province. Marketing studies have been concerned mostly with dairy products, fruits, and vegetables. Land Use Studies have covered ownership transfer, soil adaptability, farm abandonment, etc. Miscellaneous studies have been interested in such subjects as feed supplies, labour, machinery and equipment use.

During the past year, the Branch has published reports on five completed studies, continued gathering data on ten other major studies, and commenced four new projects. These studies dealt mainly with various aspects of crop and livestock production, marketing, and land use.

The demand for extension activities in economic subjects was much greater than in former years. These activities included providing staffs for short courses organized by agricultural representatives, speakers for farm meetings, press articles, material for radio programmes, and advice to individual farm operators on particular business problems. Material ranged from general economic subjects such as "Agricultural Outlook" and "Farm Management" to discussions of the detailed findings of specific studies.

The short form of Farm Business Analysis, developed during the previous year, has enjoyed a phenomenal reception. Ten thousand copies of this form have been distributed, and its use is becoming wide-spread, not only in Ontario but in other provinces as well.

Obtaining and retaining adequately trained technical staff continues to be an administrative problem. Such staff must have an adequate knowledge of current agricultural practices as well as of recent scientific findings along with a familiarity with available statistics, and an ability to obtain primary data in the field, to analyse this data, and to prepare acceptable reports.

Changes in the technical staff of the Branch during the year included:

### RESIGNATIONS

G. A. Fisher, BSA.  
R. G. F. Hill, MS.  
W. J. McAllister, BSA.  
F. E. Willock, BSA.

### APPOINTMENTS

W. J. Dillon, BSA.  
Andreas Holmsen, MSA.  
Miloslav Palme, BSA.  
Ernest Soltz, PHD.

The Agricultural Economics Co-ordinating Committee continued to function successfully during the year. Two senior staff members each of this Branch and of the Agricultural Economics Department of the Ontario Agricultural College meet monthly to co-ordinate research and extension activities. This arrangement obviates the possibility of overlapping activities and gives better planning for the research work of both bodies. During the year, the "Farm Account Book" activities were amalgamated. A member of the Branch staff was moved to Guelph to supervise the joint project.

Growers, officers of agricultural organizations and other interested persons continue to give the fullest co-operation to the Branch in securing records. Without such co-operation from several hundred such individuals each year, the work of the Branch would be very difficult. The Director and his staff wish to record their appreciation to these co-operators, who in most cases, spend a considerable amount of time and effort to supply accurate data.

## RESEARCH ACTIVITIES

Previous reports have listed 18 available publications covering studies completed at the time of reporting. This report covers only the progress during the past year.

### Reports Published During the Year

1. Re: *Grain Corn Costs and Factors Affecting Successful Production*
  - (a) "Grain Corn in Oxford County" by J. B. Nelson.
  - (b) Circular #271 "Grain Corn in Oxford County—Production Costs". A summary of the above.
2. Re: *Fruit Marketing*
  - (a) "Marketing Niagara Peninsula Pears" by E. A. Haslett and J. McNally.
  - (b) "Marketing Niagara Peninsula Plums" by E. A. Haslett and J. McNally.
3. Re: *Grape Costs and Factors Affecting Successful Production*
  - (a) "Grapes—Cost of Production Report" by J. M. MacCharles.
  - (b) Circular #293 "Grape Production Costs". A summary of the above.
4. Re: *Feed Grain Costs in Corn Zone IV*

"Spring Grain and Grain Corn Costs" by G. A. Fisher. A Preliminary Report.
5. Re: *Raspberry Costs and Factors Affecting Successful Production*
  - (a) "Raspberries—Cost of Production Report" by J. B. Nelson and M. E. Peart.
  - (b) Circular #294—"Raspberry Production Costs". A summary of the above.

These reports have had a favourable reception, both as to content and form. A second printing of the report on "Grain Corn in Oxford County" has been required.



### Completed Studies on which Reports are being Prepared

1. Potato Production Costs.
2. Table Turnip Production Costs.
3. Strawberries Production Costs.

Field work has been completed on these studies. Preliminary reports are available and final reports with summaries in circular form are in process.

### CONTINUING STUDIES

Most studies, and particularly those dealing with production costs and methods, are continued for at least three years, to lessen the bias caused by seasonal weather and market conditions. Yearly summaries are prepared for the use of those who are interested in preliminary information.

#### Dairy Production and Factors Affecting Successful Production

Records are kept on every herd in the Dairy Herd Improvement Associations. These 1,200 yearly records provide current dairy cost figures and a record of dairy herd management for various uses. They give seasonal and regional information providing not only information on changing costs but a basis for studying feeding methods, size of herds, investment, etc., in the most important farming enterprise.

This is a continuous study, with reports on particular phases of the subject issued from time to time.

#### Farm Business Organizations

Several hundred complete farm account books are obtained each year and analysed. These records provide cost and income information on various types of farming throughout the Province. Work in this classification by the Branch and at the Ontario Agricultural College has now been amalgamated and one set of reports will be issued yearly.

#### Tile Drainage Returns

This is a continuing co-operative study with the Kemptville Agricultural School. Records are being kept on a number of "matched fields", one of which has been tile drained. Costs and returns are being compared through at least one complete crop rotation.

Results for two years would suggest that improved returns on the drained fields would justify a drainage expenditure of more than \$135 per acre, which is almost double the average cost of the drainage installations studied.

#### Feed Grain Production in Corn Zone IV

Spring Grain (oats, or oats and barley) is a standard livestock feed in this area, but corn grain is being grown with some success for the same purpose. The preliminary analysis of the data collected during the first three years indicated the need of further data, so the study was continued for a fourth year.

The purpose of this study is to determine not only the comparative financial returns from these crops but also the comparative yield of feed nutrients and the conditions under which each crop gives advantages over the other.

### Tree Fruit Production in Niagara Area

The field work on this study was completed during the year by obtaining records for a third year on the production of peaches, cherries and pears. Analysis of this data will give average production costs and factors affecting successful production of these important tree fruits.

### Production of Meat Animals

Complete records are being obtained on the production of swine and beef cattle in Western Ontario. When adequate data has been obtained, the analysis should indicate the conditions and production methods under which the more successful producers are carrying on these enterprises.

Preliminary observations would indicate that a hog enterprise can be very important in boosting the earning power of a small farm and that beef cattle are generally most profitable on lower priced land and when herds are above average in size.

### Marketing Niagara Grapes

This study completes the series of studies covering the distribution of the main fruits grown in the Niagara Peninsula. Marketings from the 1955 and 1956 crop will be included in the report.

## NEW STUDIES

### Changes in Occupied Farm Land

The total occupied farm land of Ontario is becoming less each census period — seven per cent drop from 1941 to 1951 and 4.8 per cent from 1951 to 1956. The location of this disappearance and its cause are important in developing any proper land use policy.

A study was instituted to locate these areas of disappearance of occupied farm land and to investigate the basic causes.

Industrial, housing, highway use, etc., are important in some areas, but it would appear that the major disappearance is in marginal areas of Southern Ontario where the soils are shallow, and particularly where the amount of tillable soil on an existing farm unit is inadequate, and in parts of Northern Ontario.

### Cheese Factory Operation

The cheese business is adjusting rapidly to changed marketing and production conditions. In co-operation with the Dairy Commissioner, the Branch is conducting a study of Cheese Factory Production with special reference to the economics of volume of production.

### Production and Marketing in Norfolk County

A study in co-operation with the Commissioner of Marketing was conducted to determine the volume and location of production of the various fruits and vegetables grown in Norfolk County, together with the marketing distribution pattern and local marketing facilities.

### Seasonal Supplies and Prices Received for Niagara Peaches

This study is an expansion of an earlier study covering the marketing distribution pattern of peaches grown in the Niagara Peninsula. The daily supplies and varieties marketed are being related to the price received.

### Miscellaneous Studies and Reports

In addition to the specific studies listed above, the members of the Branch staff are continually analysing published statistics and other available information to prepare tables and charts on individual farm business items.

### Comparative Returns from Livestock Enterprises

From the physical and economic data obtained in livestock cost studies it is possible to calculate the comparable returns that can be expected from different livestock enterprises. These indicated returns from dairy herds, from beef herds handled in different ways, and from swine and poultry are shown in the following table:

ESTIMATED NET INCOME PER ACRE AND PER HOUR

<i>Item</i>	<i>Processed Milk Herds</i>	<i>Dual Purpose Beef Herds</i>	<i>Purchased Beef Steers Dry Lot Feeding Mixed Grain</i>	<i>Poultry</i>
Animals Needed for 10				
Animal Units .....	7 cows 3 heifers 3 calves	5 cows 1 heifer 4 steers and heifers 5 calves	20 steers	460 hens 550 pullets
Capital .....	\$6,693	\$6,020	\$5,750	\$5,140
Hours of Labour:				
Livestock .....	830 hours	730 hours	320 hours	875 hours
Crops .....	230 "	186 "	283 "	179 "
Total .....	1,060 "	916 "	603 "	1,054 "
Total Acres .....	28.9 acres	25.6 acres	28.3 acres	18.9 acres
Income .....	\$1,796	\$1,401	\$1,340	\$3,360
Cash Expenses .....	690	541	650	2,299
Depreciation .....	229	226	190	221
Net Income for Labour and Capital .....	\$ 877	\$ 634	\$ 500	\$ 840
5% Interest on Invest- ment .....	335	301	288	257
Income for Labour .....	\$ 542	\$ 333	\$ 212	\$ 583
Income per Hour .....	51¢	36¢	35¢	55¢
% Return on Capital ..	3.6%	1.4%	2.4%	4.4%
Net Income for Labour and Capital per Acre	\$ 30	\$ 25	\$ 18	\$ 45



## ESTIMATED NET INCOME PER ACRE AND PER HOUR

<i>Item</i>	<i>Fluid Milk</i>	<i>Baby Beef Herds</i>	<i>Purchased Beef Steers Pasture Fattening</i>	<i>Purchased Beef Steers Dry Lot Feeding Corn</i>	<i>Hogs</i>
Animals Needed for 10 Animal Units	7 cows 3 heifers 3 calves	7 cows 1 heifer 6 steers	13 steers	20 steers	3 sows 42 pigs
Capital	\$8,260	\$5,560	\$5,810	\$5,270	\$4,210
Hours of Labour:					
Livestock	860 hrs.	230 hrs.	260 hrs.	320 hrs.	315 hrs.
Crops	267 "	143 "	174 "	174 "	201 "
Total	1,127 "	373 "	434 "	494 "	516 "
Total Acres	31.8 ac.	23.8 ac.	27.2 ac.	17.4 ac.	22.0 ac.
Income	\$2,645	\$1,079	\$1,100	\$1,340	\$1,543
Cash Expenses	916	482	497	644	590
Depreciation	295	192	187	190	173
Net Income for Labour and Capital	\$1,434	\$ 405	\$ 416	\$ 506	\$ 780
5% Interest on Investment	413	278	290	264	210
Income for Labour	\$1,021	\$ 127	\$ 126	\$ 242	\$ 570
Income per Hour	90¢	34¢	29¢	49¢	\$ 1.10
% Return on Capital	9%	3.2%	3.7%	4.0%	11.2%
Net Income for Labour and Capital per Acre	\$ 45	\$ 17	\$ 15	\$ 29	\$ 35

## Comparative Returns from Various Crop Enterprises

As the list of completed crop production studies becomes larger, it is possible to make comparisons of the relative returns that can be expected from different crops.

With some small adjustment in the money values for the earlier studies to correct for changing economic conditions, these comparisons of costs, labour requirements, average yields and returns give the grower a business basis for crop selection.

As the list expands from year to year, the information increases in value for this purpose.

The following table gives the average production costs and returns for twelve important Ontario crops, each of which has been studied for at least three years.

## AVERAGE PRODUCTION COSTS AND RETURNS FOR SEVERAL ONTARIO CROPS

<i>Item</i>	<i>Spring Grain</i>	<i>Grain Corn (Zone 4)</i>	<i>Grain Corn (Zone 3)</i>	<i>Potatoes Main Crop</i>	<i>Turnips (Shipping)</i>
Locale of Study	Corn Zone 4	Corn Zone 4	Oxford County	Commercial Areas	Commercial Areas
Years of Study	1953-55	1953-55	1950-52	1949-51	1951-53
Number of Records	633	347	110	461	193
Acres Crop Studied per Farm	12.2	10.1	15.0	8.6	3.9
Yield per Acre	bus. 41	bus. 47	bus. 60	bags 197	bus. 531
Crop Value per Acre	\$ 30	\$ 61	\$ 70	\$ 299	\$ 194
Returns per Hour Labour	\$.86	\$2.37	\$3.78	\$ 1.98	\$1.37

<i>Item</i>	<i>Spring Grain</i>	<i>Grain Corn (Zone 4)</i>	<i>Corn (Zone 3)</i>	<i>Potatoes Main Crop</i>	<i>Turnips (Shipping)</i>
NET RETURNS TO COVER RISK AND MANAGEMENT					
Per Farm .....	\$ 7	\$ 176	\$ 425	\$ 1,126	\$ 220
Per Acre .....	\$ 1	\$ 17	\$ 29	\$ 131	\$ 57
Per Dollar of Crop Value .....	2¢	29¢	41¢	44¢	29¢
PRODUCTION COSTS PER ACRE					
Labour .....	\$ 5	\$ 8	\$ 7	\$ 56	\$ 75
Power and Machine Use .....	8	12	14	37	32
Materials .....	12	18	15	67	22
Land Use .....	5	5	5	4	5
Other .....	x	x	x	4	3
Totals .....	\$ 30	\$ 43	\$ 41	\$ 168	\$ 137
LABOUR REQUIREMENTS (HOURS PER ACRE)					
Seed-bed Preparation .....	3	5	4	10	11
Planting .....	1	1	1	12	1
Other Operations .....	x	2	2	10	24
Harvesting and Marketing .....	4	3	3	63	55
Totals .....	8	11	10	95	91

## AVERAGE PRODUCTION COSTS AND RETURNS FOR SEVERAL ONTARIO CROPS

<i>Item</i>	<i>Tomatoes</i>	<i>Green Peas</i>	<i>Sweet Corn</i>	<i>Straw- berries<sup>4</sup></i>	<i>Rasp- berries (Red)</i>	<i>Grapes</i>
Locale of Study	Canning Crop Areas		Central Counties		Central Counties	Niagara
Years of Study .....	1948-50	1948-50	1948-50	1951-53	1951-53	1951-53
Number of Records .....	517	505	479	214	58	152
Acres of Crop per Farm ..	5.9	6.9	8.0	2.5	2.5	22.0
Yield per Acre .....	tons 8.7	tons .9	tons 2.8	qts. 4,750	qts. 1,700	tons 2.6
Crop Value per Acre .....	\$ 212	\$ 60	\$ 60	\$ 952	\$ 622	\$ 175
Returns per Hour Labour	\$ 1.14	\$ 1.46	\$ .91	\$ .84	\$ .89	\$ 1.06
NET RETURNS TO COVER RISK AND MANAGEMENT						
Per Farm .....	\$ 328	\$ 89	\$ 75	\$ 422	\$ 226	\$ 871
Per Acre .....	\$ 56	\$ 13	\$ 9	\$ 167	\$ 98	\$ 40
Per Dollar of Crop Value .....	26¢	\$ 22¢	16¢	18¢	18¢	23¢
PRODUCTION COSTS PER ACRE						
Labour .....	\$ 80	\$ 10	\$ 19	\$ 474	\$ 280	\$ 60
Power and Machine Use	\$ 31	\$ 11	\$ 17	\$ 64	\$ 38	\$ 15
Materials .....	36	20	9	199	104	16
Land Use .....	7	5	6	45	46	39 <sup>6</sup>
Other .....	2	1	x	3	56 <sup>5</sup>	5
Totals .....	\$ 156 <sup>1</sup>	\$ 47 <sup>2</sup>	\$ 51 <sup>3</sup>	\$ 785	\$ 524	\$ 135
LABOUR REQUIREMENTS (Hours per Acre)						
Seed-bed Preparation .....	9	4	7	14	---	---
Planting .....	15	2	2	47	---	---
Other Operations .....	16	x	6	233	111	52
Harvesting and Marketing	81	10	16	465	315	42
Totals .....	121	16	31	759	426	94

<sup>1</sup> Estimated Total Cost per Acre, 1952 = \$205 <sup>2</sup> Estimated Total Cost per Acre 1953 = \$66

<sup>3</sup> Estimated Total Cost per Acre, 1953 = \$59 <sup>4</sup> Strawberry figures are for two years from Planting to Harvest <sup>5</sup> Includes yearly share of planting costs <sup>6</sup> Reflects increased value of land planted to grapes x = less than .5

## EXTENSION AND ADVISORY ACTIVITIES

The findings of any research programme have limited appeal unless they can be used either as a basis for further research or in a more practical way. The work of the Farm Economics Branch apparently measures up to both standards. The published reports have had wide distribution among scientific workers and also among agricultural organizations and operating farmers. There is also a continuous demand for the Director and members of his staff to attend meetings where farm business subjects are discussed and to advise individual farm operators on their business problems.

The published material is being widely used by extension workers, newspaper editors and radio broadcasters.

### Preparation of Extension Material

Comprehensive reports published after completion of each study contain the full record of the findings and are the basis for extension work. These reports are sometimes too detailed for the use of busy extension officers, consequently a summary is usually published which gives the important findings, and can be distributed at meetings and to interested individuals.

Preparation of formal reports is often time-consuming. For immediate use, therefore, the Branch usually prepares yearly summaries of work done and interim reports of preliminary findings.

### Farm Business Analysis

Most Ontario farm businesses are going through a period of rather severe adjustment. Even the so-called general farm is becoming a commercial operation. This adjustment has brought about a considerable interest in farm management.

The short form of Farm Business Analysis, the development of which was discussed in the last report of the Branch, has become the core of Ontario's farm management extension programme. In two years 10,000 copies of the form have been distributed.

This form merely uses certain standards of achievement obtained in the various research studies as a basis for measuring the accomplishments on an individual farm. An improved programme of management can then be developed with a view to strengthening the factors shown by the analysis to be weak.

Considerable interest in this form has occurred outside the Province. Several Provincial authorities are experimenting with its use. For use in Quebec, it has been translated into French.

### Meetings

During the year the Director and members of the staff addressed 43 major meetings, when study findings, farm management, agricultural outlook, etc., were discussed.

Many small meetings of study groups, producer associations and other group committees were also attended.



### Short Courses

Branch personnel co-operated with the staff of the Agricultural Economics Department of the Ontario Agricultural College in staffing Short Courses conducted by agricultural representatives in 32 centres across the Province. These courses were usually for three days each and centred around Farm Business Analysis.

### Advisory Services

The demand for individual advice to farm operators on farm business matters is increasing tremendously. These men either call at a Branch Office or take advantage of an opportunity when the Director or one of the staff is in the local area for a meeting or other purposes.

## *Fruit Branch*

The Fruit Branch administers The Farm Products Grades and Sales Act, The Plant Diseases Act 1954, and the regulations passed under the said Acts. In addition, this Branch annually undertakes other related work in connection with the marketing of fruits, vegetables and honey, including acreage surveys of the marsh areas and certain highland production districts; fruit and vegetable container research; testing of grapes for sugar content in relation to maturity; colour determination of tomatoes for processing, by use of electronic instruments; checking of tenderometer instruments used for the grading of peas for processing; setting up fruit and vegetable exhibits at the C.N.E. and the Central Canada Exhibition; summarizing shipments of produce from the main production areas; and inspection of honey houses.

This work is administered through seven district offices under supervising inspectors who are graduates in Agriculture. These key men assist the industry in promoting the proper harvesting, handling, storing, grading, packaging and marking of produce being shipped for sale. The educational programme applied in all areas, in addition to the inspection of produce at packing sheds, shipping platforms and at the wholesale level, does much to ensure more orderly marketing of fruits and vegetables produced in Ontario.

### THE FARM PRODUCTS GRADES AND SALES ACT

The administration of The Farm Products Grades and Sales Act during 1956-57 provided for the inspection of fresh fruits and vegetables, the grading of tomatoes and carrots for processing, inspection of other regulated processing crops in cases of dispute, inspection of honey and the licensing of fruit and vegetable dealers. Certain Marketing Board work undertaken at the request of the local boards and the Markets Branch included checking on deliveries of pears and other fruit crops to processors, checking of weight slips at certain factories and determining the sugar content of grapes being delivered to wineries.

#### Inspection of Fruit and Vegetables

The following compulsory inspection areas and inspection points were designated by the Minister:

<i>Compulsory Area</i>	<i>Inspection Station or Points</i>	<i>Location</i>
Essex County .....	1. Wheatley Insp. Station 2. Platforms of licensed dealers 3. Platforms of CNR & CPR 4. Blytheswood Insp. Station	#3 H'wy. 1 mi. w. of Wheatley In the area In the area Leamington Sideroad 5 miles north of Leamington
Niagara Peninsula .....	1. Fruitland Insp. Station 2. Hamilton Municipal Mkt.	Q.E. Way, near Fruitland Hamilton
Bradford Marsh .....	1. #11 Inspection Station 2. #400 Inspection Station	#11 H'wy. south of Bradford #400 H'wy. 2200' south of County Rd. #15, York Cnty.
* All Counties and Mor- rison Township in Dis- trict of Muskoka .....	1. Gravenhurst Insp. Station	#11 H'wy. 2 miles south of Gravenhurst

\* Gravenhurst Station does not cover any particular production area but all trucks transporting produce from Southern Ontario to Northern Ontario along #11 Highway must stop for inspection.

## Summary of Operations at Highway Inspection Stations 1956-57

	<i>Essex County Wheatley Station Blytheswood Station</i>	<i>Niagara Peninsula Fruitland Station</i>	<i>Bradford Marsh #11 Station #400 Station</i>	<i>Gravenhurst Inspection Station</i>
Station Opened .....	June 11	June 25	July 3	Open
Station Closed .....	Sept. 15	Oct. 13	Nov. 9	Year
Days Operated .....	97	121	130	Round
Trucks Checked ....	4,250	6,247	10,563	8,808

## Inspection Within Compulsory Inspection Areas

Extensive inspection was carried out at dealers' platforms and shipping points throughout the designated closed areas. Seasonal inspectors are employed as required during the main production season and are supervised by the permanent staff. Most of this type of inspection is done on request and certificates are issued on truckloads and carloads, for which fees are charged. Administrative inspection is carried out at express platforms, growers' packing-sheds and central packs. Extension fieldwork is carried out by the supervising inspectors at the grower and packer levels. This work was found to be of great benefit in the marketing of produce.

## Compulsory Inspection Areas — 1956-57

	<i>Essex and Kent Counties</i>	<i>Niagara Peninsula</i>	<i>Bradford Marsh</i>
Growers and Packers Visited .....	4,301	3,811	4,346
Shippers and Wholesalers Visited ....	3,957	7,026	16,458
Retailers Visited .....	735	2,246	572
Detentions Issued .....	221	437	283
Violations Issued .....	2	19	23
Convictions Registered .....	2	11	12
Inspection Cert's. Issued .....	2,511	1,274	5,567
Markets Visited .....	28	550	24

## Shipments of Fruit by Hundredweights from Closed Areas — 1956-57

<i>Commodity</i>	<i>Essex County</i>	<i>Niagara Peninsula</i>
Apples .....	9,801	12,626
Blackberries .....	—	56
Blueberries .....	—	4
Cherries .....	95	25,238
Currants .....	6	268
Gooseberries .....	1	134
Grapes .....	81	248,998
Muskmelons .....	34,475	8
Peaches .....	51,416	209,299
Pears .....	102	62,021
Plums and Prunes .....	83	62,221
Quince .....	—	12
Raspberries .....	1,587	905
Strawberries .....	2,197	18,440
Watermelon .....	258	238
Totals .....	100,102	640,468



## Shipments of Vegetables by Hundredweights from Closed Areas — 1956-57

<i>Commodity</i>	<i>Bradford</i>	<i>Essex County</i>	<i>Niagara Peninsula</i>
Asparagus .....	—	906	671
Beans .....	1,149	6,806	165
Beets .....	12,490	2,381	15
Broccoli .....	—	9	2
Brussels Sprouts .....	—	2	—
Cabbage .....	21,400	62,548	76
Carrots .....	305,680	3,438	6
Cauliflower .....	24,190	7,079	17
Celery .....	169,106	19,654	213
Corn .....	—	5,158	18
Cucumbers (Field) .....	965	57,899	1,177
Cucumbers (Hot-House) .....	—	55,207	115
Lettuce (Head) .....	278,598	24,989	16
Lettuce (Leaf) .....	—	944	—
Onions .....	177,860	166,068	131
Onions (Green) .....	—	136	—
Parsnips .....	9,154	—	—
Peas .....	171	37	106
Peppers .....	181	13,841	311
Potatoes .....	184,823	369,968	240
Pumpkin .....	222	—	—
Radishes .....	5,356	2,141	—
Rhubarb .....	—	1,142	—
Spinach .....	7,340	429	—
Squash .....	748	204	78
Sweet Potatoes .....	—	16	—
Tomatoes (Field) .....	1,987	196,043	53,988
Tomatoes (Hot-House) .....	—	11,553	265
Turnips .....	—	—	—
Vegetable Marrow .....	142	1	—
Totals .....	1,201,562	1,008,599	57,610

## Inspection Outside Compulsory Areas

In addition to the services rendered within compulsory inspection areas, considerable inspection of fruits and vegetables is carried out in the other main production areas and at receiving and distribution points throughout the Province. This coverage is a necessary part of the process of orderly marketing of produce grown, shipped and offered for sale in Ontario. Where compulsory control of grades is applied in closed areas, it is necessary to balance such controls in other areas on an administrative basis.

Inspectors were also provided on markets and at receiving points to check fruits and vegetables arriving, being re-packed and being offered for sale at the wholesale and retail levels. These inspectors kept in close contact with the staff in closed areas, other shipping points and at other receiving points and difficulties were traced back to source and remedied with the least possible delay.

## Inspection Work at Retail Level

This work is divided between Federal and Provincial inspection staffs, to ensure that all areas are covered but no over-lapping occurs. Retail work in Toronto and Hamilton is done entirely by the Dominion Consolidated Retail Unit, except for spot checks by Provincial Supervisors and the following-up of consumer complaints.

The three main central chain store warehouses in Toronto are covered daily on a blanket basis by Provincial men, who check and certify shipments going to stores throughout the Province.

Roadside stands and community sales barns in all areas have been mainly covered by Provincial inspectors.

#### Breakdown of Visits Made — 1956-57

<i>District</i>	<i>Packers, Shippers, Wholesalers</i>	<i>Retailers</i>	<i>Roadside Stands and Farmers' Markets</i>	<i>Producers</i>
Essex and Kent Counties .....	3,957	735	28	4,301
Bradford Area .....	16,458	572	131	4,346
Muskoka District .....	284	696	37	6
Niagara Peninsula .....	7,026	2,246	550	3,811
Galt, Kitchener, Stratford, Brantford .....	319	1,231	173	164
Eastern Ontario .....	1,170	960	34	447
Toronto Area .....	32,423	760	879	794
Thedford, Grand Bend .....	716	2,924	336	2,098
Norfolk County .....	97	519	165	471
Northern Ontario .....	846	1,101	3	157
Totals .....	63,296	11,744	2,336	16,595
Request Inspection Certificates Issued .....			18,304	
Fees Collected from Certificates .....			\$24,635	

#### Violations

<i>Detentions Issued</i>	<i>Violation Reports Issued</i>	<i>Convictions Registered</i>	<i>Total Fines</i>	<i>Letters of Warning</i>
4,427	125	61	\$1,510.	64

#### GRADING AND INSPECTION OF PROCESSING CROPS

##### Tomato Grading

Tomato grading is compulsory under the regulations where the processor contracts more than 30 acres. In 1956, 86 platforms were operating, necessitating 148 graders who graded 58,203 loads of tomatoes. The Province is divided into Western, Central and Eastern districts, with offices located at Leamington, Grimsby and Brighton, with a clerk in each to look after records. A fee of 25¢ per ton was paid by the processors, who collected 12½¢ from the growers. The actual grading costs are covered by the industry, with the Department covering the administration and supervision.

##### Summary of Tomato Grading Operations

	<i>Western District</i>	<i>Central District</i>	<i>Eastern District</i>	<i>Province</i>
Grading Commenced .....	Aug. 15	Aug. 21	Aug. 22	Aug. 15
Grading Finished .....	Oct. 31	Oct. 16	Oct. 24	Oct. 31
Days of Operation .....	77	52	54	77
Total Graders Employed .....	63	33	52	148
Supervisors Employed .....	5	3	5	14
No. Receiving Platforms .....	29	17	40	86
No. Loads Graded & Rec'd. ....	33,662	7,608	16,933	58,203
No. Loads Rejected .....	889	438	448	1,775
Average Grades to Oct. 13 .....	59-40-1	47-48-5	51-45-4	52.3-44.3-3.3

### Carrot Grading

In 1956 carrots for processing were graded at the following points: Newcastle, Rexdale, Ontario Food Terminal, Clarkson, Hamilton and Grand Bend. Carrots are purchased on grade to promote an increase in the percentage of No. 1 Large roots being delivered, for which higher prices are paid. In four years of grading, increased returns to the growers concerned have been evident. Fees are collected covering the entire cost of this operation.

#### AVERAGE GRADES

<i>Loads Graded</i>	<i>No. 1 Large</i>	<i>No. 1 Small</i>	<i>Culls</i>	<i>Loads Rejected</i>
687	70%	26%	4%	15

### Other Processing Crops

Inspectors are constantly requested to inspect regulated processing fruit and vegetable crops when there is a dispute on grade. The decision of the inspector is final (covered in Marketing Agreements). All disputes were settled amicably.

### Inspection of Honey

The inspection of honey is carried out under the jurisdiction of The Farm Products Grades and Sales Act and is a co-operative effort between Federal and Provincial Inspection Services.

A Provincial Honey Inspector-Fieldman also worked closely with the producers and packers and endeavoured to promote proper processing, grading and classification of honey at the producer level. Honey houses were also inspected for sanitation. Troubles found by inspectors at the wholesale and retail levels were passed back and visits made to the producers concerned. Honey meetings were attended by Department men in the various districts and close contact was kept with the work being done by the Department of Apiculture, O.A.C., Guelph.

### Licensing of Dealers

Under the regulations of The Farm Products Grades and Sales Act, dealers in fruit and vegetables must be issued with a dealer's licence and a windshield marker for each truck used by the dealer. A dealer is designated as any person who buys or sells fruit or vegetables other than at retail.

A licence may be suspended or revoked (a) for failure to pay promptly any debt owing to a producer; (b) where any dealer has obtained produce from a producer by fraud or false pretenses; and (c) for failure to comply with the grading regulations.

Numerous cases of non-payment are referred to this Branch each year. Quite often suitable settlements are made without the necessity of both parties having to go to a civil court. Such settlements were made through the Associate Director in 6 cases of non-payment to growers for produce purchased by dealers. Arrangements were made for the payment of \$6,489.90 to growers.

During 1956 there were 897 dealer licences issued and markers were issued for 2,029 trucks.



### Acreage Surveys

Acreage surveys were again undertaken in the marsh lands of the Bradford district, the Kent-Essex area and in the Grand Bend - Thedford areas. These districts comprise the main late vegetable producing areas of the Province and the acreages are summarized as follows:

#### ACREAGE SURVEYS — MARSH LANDS — 1956

<i>Commodity</i>	<i>Bradford</i>	<i>Kent and Essex</i>	<i>Thedford and Grand Bend</i>
Beets .....	69	158	10
Cabbage .....	135	-----	18
Carrots .....	1,504	102	442
Cauliflower .....	141	-----	2
Celery .....	441	7	120
Cucumbers .....	-----	-----	11
Lettuce .....	1,369	6	235
Onions .....	1,592	1,235	127
Onions (Setts for Seed) .....	-----	-----	94
Parsnips .....	45	-----	-----
Potatoes .....	1,559	106	488
Radishes .....	66	-----	27
Spinach .....	25	56	-----
Tomatoes .....	-----	-----	4
Turnips .....	1	-----	42
Misc. Crops .....	16	2	37
Totals .....	6,963	1,672	1,657

### Acreage Survey — Norfolk County — 1956

As a result of a special request from the Norfolk Fruit Growers' Association and from the Ontario Fruit and Vegetable Growers' Association, a survey was undertaken of fresh fruit and vegetable acreages in Norfolk County.

#### NORFOLK COUNTY VEGETABLE ACREAGE

<i>Commodity</i>	<i>Acreage</i>
Sweet Corn .....	1,069
Late Potatoes .....	439
Early Potatoes .....	368
Asparagus .....	203
Peppers .....	115
Field Tomatoes .....	76
Cantaloupe .....	39
Cabbage .....	25
Turnips .....	10
Watermelon .....	8
Cauliflower .....	14
Squash, Pumpkin, Vegetable Marrow .....	13
Misc. Vegetables .....	22
	<hr/> 2,401

## NORFOLK COUNTY TREE FRUIT AND SMALL FRUIT SURVEY — 1956

<i>Commodity</i>	<i>Acreage</i>
Apples .....	2,504
Strawberries .....	2,160
Peaches .....	527
Cherries (Sour) .....	173
Pears (Other than Kieffer) .....	117
Kieffer Pears .....	69
Raspberries .....	44
Cherries (Sweet) .....	39
Grapes .....	38
Plums .....	34
	<hr/> 5,705

## The Plant Diseases Act 1954, and Related Work

This work may be divided into three headings:

- (1) Plant Diseases Act administration;
- (2) Variety and Virus Identification service of nursery tree-fruits and red raspberries;
- (3) Joint projects of survey and pesticide control with the Canada Department of Agriculture other than those under The Plant Diseases Act.

Under The Plant Diseases Act, the following is provided for: nursery inspection; apple maggot inspection; bacterial ring rot inspection; and municipal inspection.

## Apple Maggot Inspection

In this work the Fruit Branch has had the co-operation of the Plant Protection Division, Dominion Department of Agriculture. Thirty-one per cent fewer growers requested and received inspection in 1956 than in 1955. This is probably due to the lack of export business in apples during the past few years. Apples for export to the U.K. must be from orchards certified as being free from apple maggot.

Sixty-two per cent of the growers listed for inspection had orchards showing apple maggot infestation to some degree. Heavier infestations were noted than during the previous two years. The cause might be attributed partially to the timing of apple maggot sprays in 1956 in relation to the later emergence of the apple maggot flies.

*Per Cent of Orchards Inspected Showing Apple Maggot Infestation*

<i>1954</i>	<i>1955</i>	<i>1956</i>
60.8%	37.7%	62.4%

## Inspection of Nurseries

Nurseries and persons operating as dealers in nursery stock must obtain a licence issued by the Fruit Branch. The Plant Protection Division, Dominion Department of Agriculture, co-operated with the staff and, under the control of the Provincial Entomologist, nursery stock was inspected to ensure that it was free

from San Jose Scale, Fire Blight and Black Knot. Infested stock was removed and destroyed. Fifty of the 254 nurseries and dealers' premises had an infestation of one or more of the plant diseases mentioned above. San Jose Scale was found in 26 nurseries, Fire Blight in 2 and Black Knot in 15.

As part of the programme of helping the nurserymen with advice on general insect and disease control, inspectors again checked for Juniper Scale, Juniper Webworm and Taxus Weevil. When these troubles were found, the operator was notified and advised on control measures. Juniper Scale was reported in 53 nurseries, Juniper Webworm in 21 and Taxus Weevil in 1.

### Bacterial Ring Rot

The enforcement of Bacterial Ring Rot regulations is the responsibility of the Field Crops Branch but five Fruit Branch inspectors assisted in the inspection of premises where bacterial ring rot had been reported. This normally includes the checking and disposal of the potatoes and disinfecting the containers, storages and equipment.

### Municipal Inspection

The Township of Saltfleet took advantage of the section of The Plant Diseases Act entitling them to appoint an inspector to check Peach Yellows, Little Peach, X-Disease and Black Knot in fruit trees. Eight cases of Black Knot were reported.

### Variety Certification

There were 431,593 fruit trees checked for trueness-to-variety in 25 nurseries, 1,666 mixtures or incorrectly named trees being found.

#### SUMMARY

No. nursery licences issued .....	219
No. dealer in nursery stock licences issued .....	57
No. nurseries and dealers' blocks inspected .....	254
No. of Fruit Stock inspected .....	1,094,936
No. Fruit Stock with San Jose Scale .....	103
No. Fruit Stock with Fire Blight .....	163
No. Fruit Stock with Black Knot .....	145
No. Ornamental Stock inspected .....	3,975,694
No. Ornamental Stock with San Jose Scale .....	217
No. Ornamental Stock with Fire Blight .....	nil
No. Ornamental Stock with Black Knot .....	2
TOTAL amount of Nursery Stock inspected .....	5,070,630

Checking of apple rootstocks for trueness-to-name was continued. There were 187,300 rootstocks of the Malling and Malling-Merton groups inspected, out of which 128 mixtures were found. Certificates of trueness-to-name for the fruit varieties are issued to nurseries who meet the specifications. A list of the growers and fruit certified is issued for the benefit of interested fruit growers.

### Raspberry Certification

There were 28 varieties of red raspberries inspected for virus diseases and trueness-to-name in 18 plant growers' plantings. Dominion inspectors were given instruction in this work. Three growers' plantings were turned down because of



mixtures and/or mosaic. Certain varieties in 4 of the 14 certified plantings were refused certification because of virus. The prevalence of Anthracnose was high in susceptible varieties.

### Joint Projects Other than Plant Disease Control

*Japanese Beetle* — Two projects were carried out: (a) trapping operations during the summer in Hamilton, Windsor and Port Burwell; (b) soil treatment in Windsor during the spring.

Trapping and scouting in Windsor and Hamilton indicated that infestations appeared to be building up. The trap attendants were students supervised by the Dominion Plant Protection Offices and the Fruit Branch provided for payment for their services. Soil treatment with 10% granulated Dieldrin rather than DDT provided very satisfactory control, application being more simplified and the cost per acre reduced. The Fruit Branch paid half the cost of the spray material.

### Extension

Nursery inspectors and supervising inspectors advise on insect and disease control in connection with the nursery work under the supervision of the Provincial Entomologist.

### Staff Changes

During the year under review changes in the permanent and temporary staff were as follows:

#### RETIREMENT

Geo. Wilson (B.S.A.) — Director ..... Dec. 31, 1956

#### RESIGNATIONS

Douglas McCutcheon — Honey Inspector ..... Apr. 21, 1956  
A. W. Russell — Inspector ..... July 15, 1956  
R. F. Olsen — Inspector ..... Dec. 15, 1956

#### NEW APPOINTMENTS

E. G. Armstrong, Gravenhurst ..... June 1, 1956  
B. Beggs, Ontario Food Terminal, Toronto ..... Jan. 3, 1957  
W. Elliott, London ..... Jan. 3, 1957  
F. Field, Grimsby ..... Jan. 3, 1957  
R. W. Kirk, Leamington ..... May 1, 1956  
I. MacSween, Grand Bend ..... June 1, 1956  
J. G. Morrison, Forest ..... June 1, 1956  
W. F. Williams, Bradford ..... Jan. 3, 1957

## *Live Stock Branch*

Ever since Confederation Canada's live stock farmers have produced more meat than the amount required to feed the Canadian people. As a consequence, the welfare of the live stock industry during the past 90 years has been, to a large extent, dependent on the success attained in finding markets for the surplus. It now appears that this era of abundant meat supplies is drawing to a close; certainly such is the case if 1956 provides the clue to future trends.

Despite the fact that meat production reached an all time high for any peacetime year, Canada's 1956 imports of beef, lamb and poultry meat were greater than her exports. In the case of pork the opposite trend prevailed, presumably because the embargo imposed in 1952 following the outbreak of vesicular exanthema in United States was still in effect. As a result, international trade in pork products followed a one way route. Even so, exports of pork were little more than enough to enable Canada to maintain her position as a net exporter of meat products.

Ontario continued to be the largest live stock producing province, accounting for 31.9% of the cattle, 36.8% of the hogs, 28.3% of the calves and 29.2% of the lambs marketed in 1956. However, almost 200,000 head of the cattle originated in Western Canada, having been imported for feeding purposes. Because of the relatively large volume of live stock produced in the province, this important branch of the agricultural industry again provided over 70 per cent of Ontario's gross farm income.

Accordingly, policies sponsored by the Ontario Live Stock Branch have been designed to improve the economic status of those engaged in live stock production. Special emphasis is placed on programs which contribute to improvement in the type and quality of animals, in identifying those which have ability to convert feed into animal products efficiently and in the prevention and control of disease. An outline of these policies and the extent to which they were utilized in 1956 is contained in the following report.

### CATTLE

#### Artificial Insemination

Although members of the staff of the Ontario Live Stock Branch took an active part in the organization of artificial insemination centres, the task of managing the affairs of each centre is now vested in a Board of Directors, elected by a majority vote of the members.

During 1956 there were 16 active artificial insemination centres in the province, 9 in Old Ontario and 7 in Northern Ontario. Inasmuch as each centre provides service in a fairly large area, it is now possible for every farmer in the province, except those living in very remote districts, to have his cows bred to the best bulls available.

Every centre in Old Ontario maintains a battery of bulls, but not necessarily bulls of all breeds. Nevertheless each is in a position to provide service for all breeds as the result of the system of semen exchange which has been worked out between them.

In 1955 the Waterloo Cattle Breeding Association gained the distinction of being the first A.I. centre in the world to use frozen semen exclusively. Since then most of the centres have adopted the practice of storing frozen semen from their favourably proven bulls, thus making it possible to provide selective service for those who wish to arrange special matings.

All semen intended for freezing is sent to the Ontario Veterinary College for processing, freezing and storage. Afterward it may be sent back to the centres from which it was obtained, or shipped to centres in Northern Ontario or sold to organized centres in other provinces. Throughout 1956 shipments were made at regular intervals to A.I. centres in Alberta, Manitoba and Nova Scotia, which centres are now depending on Ontario for a major portion of their requirements.

The following table shows the number of cows bred by each Ontario centre in 1956 and in 1955:

	1956	1955
Oxford and District C.B. Assn. ....	69,063	58,881
Maple C.B. Assn. ....	49,112	47,513
Waterloo C.B. Assn. ....	53,108	47,007
Eastern Ontario C.B. Assn. ....	41,585	41,526
Tor. Dist. C.B. Assn. ....	33,981	35,272
Quinte Dist. C.B. Assn. ....	33,670	32,934
Hamilton Dist. C.B. Assn. ....	34,261	33,702
Lambton C.B. Assn. ....	9,218	8,674
Essex C.B. Assn. ....	7,354	6,865
Temiskaming C.B. Assn. ....	1,391	1,435
Algoma C.B. Assn. ....	615	544
Thunder Bay C.B. Assn. ....	544	615
Rainy River C.B. Assn. ....	518	517
* Kenora C.B. Assn. ....	59	---
* Cochrane C.B. Assn. ....	157	---
* Porcupine C.B. Assn. ....	451	---
Total .....	335,087	315,485

\* Commenced operations late in 1956.

N.B. On January 1, 1957, the Maple Cattle Breeding Association and the Tor. District Cattle Breeding Association, two centres with headquarters at Maple, amalgamated to form the Central Ontario Cattle Breeding Association.

The following table reveals the number of services according to the breed of the bull from which the semen was obtained:

	<i>No. of cows inseminated</i>	<i>% of total</i>
Holstein .....	192,343	57.40
Hereford .....	61,737	18.42
Shorthorn .....	28,842	8.61
Jerseys .....	15,759	4.70
D.P. Shorthorn .....	9,651	2.88
Ayrshire .....	8,820	2.63
Guernsey .....	8,529	2.55
Angus .....	9,020	2.69
Red Poll .....	386	.12
Total .....	335,087	100.00

Licensed Artificial Insemination Centres are eligible for grants on account of the bulls which they purchase in amounts equal to 33-1/3 per cent of their purchase price but not exceeding \$600 per bull. In addition, centres in Northern Ontario



may obtain grants at the rate of \$1.00 per cow inseminated: such grants are paid to compensate for the higher cost of breeding cows in the more sparsely settled areas. In 1956-57 the total grants paid to centres buying bulls amounted to \$25,553.72 while \$8,504.00 was paid to the centres in Northern Ontario.

### Bull Premium Policy

This policy was designed to stimulate the use of good beef bulls in herds where artificial breeding is considered impractical. Accordingly commercial beef producers who buy approved bulls at the Ontario bull sale or at consignment sales held under the auspices of county or district Breeders' Clubs are eligible for grants equal to 25 per cent of the purchase price, the maximum grant being \$150 in the case of a bull bought at the Ontario bull sale and \$75 on a bull bought at a county or district sale.

A show held prior to the commencement of the Ontario bull sale affords the three judges an excellent opportunity of appraising the bulls included in the offering. In addition to placing the animals, the judges act as a culling committee. If two judges indicate that a bull is below the standard for approval, the owner is obliged to withdraw him from the sale, but is permitted to retain ownership; however if a bull is rejected by the three judges he must be sold for slaughter, with the proceeds of sale being remitted to the owner.

Following is a summary of bulls sold in the sale held during the fiscal year 1956-57:

Total number of entries .....	252
Number withdrawn .....	15
Number culled (a) by 2 judges .....	27
(b) by 3 judges .....	37
Number sold .....	173

### AVERAGE PRICES

<i>Breed</i>	<i>No. sold</i>	<i>Av. price 1956-57</i>	<i>1955-56</i>
Shorthorns _____	72	\$ 412.71	\$ 381.77
Angus _____	22	362.50	420.89
Herefords _____	79	450.63	379.45
Total _____	173	423.64	386.82

Members of the Live Stock Branch staff inspect and assist in the selection of animals entered in county or district sales. The bulls accepted for entry are given tentative approval when the farm inspection is made, but a final inspection is made on sale day and only those bulls approved at that time may be included in the offering.

In 1956-57 bulls inspection service was provided in connection with 49 sales at which 434 bulls were sold. A report of these sales is contained in the following table:

<i>Breed</i>	<i>No. sales</i>	<i>No. bulls sold</i>	<i>Av. price</i>
Angus _____	8	39	\$310.00
Hereford _____	19	189	\$290.40
Shorthorn _____	22	206	\$273.40

N.B. Two or more breeds were offered in 4 of the sales listed above.

Thus the total number of approved bulls sold through the Ontario bull sale and county or district sales during the year 1956-57 was 607. Premiums paid to purchasers during the same period amounted to \$48,934.37.

### Consignment Sales

Breeders' Clubs that have been approved by the Minister are eligible for grants to assist in paying expenses incurred in the staging of consignment sales. Although a club may only receive a grant on account of one sale held during any year, a number of the clubs hold two sales. All animals, both males and females, offered in sales at which the grant applies must be inspected and approved by a representative of the Ontario Live Stock Branch. In addition they must be up to a high standard from the standpoint of animal health.

Grants, on the basis of \$5.00 per animal sold but not exceeding \$200 per sale, were paid during the fiscal year as follows:

<i>Breed</i>	<i>No. Sales</i>	<i>No. Animals Sold</i>	<i>Total Grants</i>
Holsteins .....	5	183	\$ 835.00
Ayrshires .....	2	86	400.00
Guernseys .....	5	154	770.00
Shorthorns .....	16	423	2,085.00
Herefords .....	11	307	1,555.00
Angus .....	5	173	795.00
Combined beef breed sales .....	4	139	695.00
Totals .....	48	1,465	\$7,135.00

### Special Breed Shows

Breeders' Clubs may obtain grants to assist in financing county or regional breed shows. Such grants are on the basis of 20 per cent of the prize money paid out but not exceeding \$100.00 per show. At each of these shows entries are restricted to a certain defined area and no person may exhibit at more than one such show unless the Breed Association concerned sponsors a championship show or district championship shows, in which case the top winners at the local or regional show may compete at the championship show.

Following is a summary of breed shows held in 1956:

<i>Breed</i>	<i>No. Shows</i>	<i>No. Entries</i>	<i>No. Animals Shown</i>	<i>Total Grants</i>
Holstein .....	42	5,285	4,029	\$3,629.85
Ayrshire .....	18	1,384	1,035	1,173.60
Jersey .....	18	1,374	1,039	1,145.21
Guernsey .....	13	1,057	825	1,021.70
Shorthorn .....	9	933	698	873.60
Dual Purpose				
Shorthorn .....	1	128	102	100.00
Hereford .....	8	919	679	777.60
Angus .....	2	131	101	143.00

### Freight Assistance to Exhibitors at Foreign Shows

In 1956 Canadian exports of pure bred cattle and grade dairy cattle exceeded 43,000 head, the majority of which originated in Ontario. Although cattle were exported to over 15 countries, United States continued to take a very high percentage of the total. As a consequence Ontario breeders deem it advisable to exhibit at leading shows in that country. Inasmuch as a winning performance there might contribute to an expansion of export trade, the Ontario Live Stock Branch makes grants equal to 50 per cent of the freight charges to Breed Associations that undertake to sponsor exhibits at such shows.

In 1956, the Ontario Holstein, Jersey and Ayrshire Clubs sponsored exhibits at the International Dairy Show, while the Shorthorn and Angus Clubs were represented at the International Live Stock Exposition, both shows being held in Chicago. The performance of the dairy breeders was outstanding, Ontario animals winning reserve grand championship honours in the female section in both Holsteins and Ayrshires, while an Ontario bred Jersey was reserve grand champion for that breed.

In the group classes, Ontario had first prize state herd in the Ayrshire division and stood second in both Holsteins and Jerseys. Other notable wins were first prize get-of-sire in all three breeds; first prize in Dairy Herd and group of three cows in Jerseys; first prize dairy herd and second prize group of three females in Holsteins, and first prize dairy herd and first prize group of three females in Ayrshires. In addition the firm of B. H. Bull & Sons of Brampton was declared premier breeder and exhibitor in Jerseys, while Stansell Bros. of Aylmer won similar honours in the Ayrshire division.

Ontario breeders were well up in most classes in which they showed at the International Live Stock Exposition but the most coveted award was captured by Mr. S. G. Bennett, who bred and exhibited the grand champion Shorthorn bull.

#### DEMONSTRATION PASTURE FARMS

In 1950 the Department of Agriculture leased five pasture farms, one located in each of the following counties: Kent, Middlesex, Bruce, Victoria and Lanark. Since then these farms have been used for the purpose of demonstrating recognized methods of pasture improvement. The policy with regard to operations is determined by a committee comprised of members of the Department, the Beef Producers' Association and the Soil and Crop Improvement Association, with the Live Stock Commissioner serving as chairman. Funds for financing the project are made available from the appropriations of the Ontario Live Stock Branch.

At the outset each farm was sub-divided into three plots of equal size. Two methods of pasture improvement have been adopted, namely fertilizing old sod and breaking up, fertilizing and re-seeding. Hence on each farm one plot has received applications of fertilizer at appropriate intervals, one plot has been broken up, fertilized and re-seeded, while the third plot was left in its natural form to serve as a check.

During the first five years each plot was pastured in accordance with its estimated carrying capacity and its productivity measured in terms of pounds of beef produced. A record of the cost of all operations has been maintained throughout the period and complete details of the results were published in bulletin form in 1956. Herewith follows a summary of the highlights:

#### CHECK PLOTS

<i>Farm</i>	<i>Expenditures (5 years)</i>	<i>Value of Beef produced (5 years)</i>	<i>Difference between Expenses and Returns</i>	<i>Increase or Decrease from Check</i>
Kent .....	-----	\$ 69.47	\$ 69.47	-----
Middlesex .....	-----	68.60	68.60	-----
Bruce .....	-----	61.48	61.48	-----
Victoria .....	-----	97.29	97.29	-----
Lanark .....	-----	169.00	169.00	-----
Average 5 farms .....	-----	\$ 90.00	\$ 90.00	-----



## FERTILIZED PLOTS

Kent .....	\$ 33.25	\$ 114.54	\$ 81.29	+ \$ 11.82
Middlesex .....	38.36	120.29	81.93	+ 13.33
Bruce .....	35.27	122.12	86.85	+ 25.37
Victoria .....	33.21	122.40	89.19	— 8.10
Lanark .....	59.45	208.88	149.43	— 19.57
Average 5 farms .....	<u>\$ 38.57</u>	<u>\$ 133.34</u>	<u>\$ 94.77</u>	<u>+ \$ 4.77</u>

## RE-SEEDING PLOTS (5 YEARS)

Kent .....	\$ 63.20	\$ 149.17	\$ 85.97	+ \$ 16.50
Middlesex .....	83.06	119.57	36.51	— 32.09
Bruce .....	66.94	165.26	98.32	+ 36.84
Victoria .....	56.99	174.72	117.73	+ 20.44
Lanark .....	74.85	312.08	237.23	+ 68.23
Average 5 farms .....	<u>\$ 67.99</u>	<u>\$ 177.42</u>	<u>\$ 109.43</u>	<u>+ \$ 19.43</u>

The second five-year-term commenced in 1956, during which year the original check plots were fertilized and re-seeded after having been broken up the previous fall. According to present plans, the original fertilized plots will be used as checks and the plots seeded in 1951 will serve as fertilized plots.

In 1956 the program was enlarged to include a 20-acre plot on a low, poorly drained land in Dufferin county and 15 acres of unproductive soil in Parry Sound District. In both cases the plots were re-seeded with mixtures which were demonstrated suitable to the particular areas, the purpose being to have them serve as demonstration pastures during the next few years.

## ADVANCED REGISTRY FOR BEEF CATTLE

Although performance testing has played a vital role in the breeding of dairy cattle and swine for a great many years, it has only recently been applied to beef cattle. As a matter of fact, the first station for testing beef cattle in Ontario was established on the Auld farm, O.A.C., Guelph, in 1950. Breeders were afforded the opportunity of obtaining information about the performance of their herd sires by submitting for test four of the progeny of each. The factors considered in the test were: rate of gain, economy of gain and carcass quality, all of which are hereditary.

During 1956 the program was changed over to a straight performance test. Instead of appraising sires on the basis of the performance of their progeny, young bulls that appear destined to become future herd sires can now be submitted for test. This test commences when a bull is eight months old and covers the 168 days following, during which time complete records with respect to gain and feed consumption are maintained. At the conclusion of the test the bulls are classified from the standpoint of their type and conformation, the grade designations being choice, very good, commercial, plain and rejected. In the event that the station is filled to capacity, bulls may be tested at home.

Since the changeover from a progeny to a performance test was made 41 bulls have completed the test. A summary of the results is shown in the following table:

	<i>Av.</i>	<i>High</i>	<i>Low</i>
Starting weight .....	548 lbs.	655 lbs.	445 lbs.
Finishing weight .....	951 "	1,120 "	836 "
Total gain .....	404 "	524 "	313 "
Daily gain (on test) .....	2.40 "	3.12 "	1.86 "
Daily gain from birth to end of test .....	2.15 "	2.55 "	1.75 "
Feed per lb. gain .....	5.31 "	3.94 "	6.57 "

Bulls that fail to make two pounds per day or bulls graded "rejected" must be sold for slaughter, otherwise the bulls are returned to their owners at the completion of the test. Of the 41 bulls referred to above 3 were sold for slaughter.

### Dairy Herd Improvement Policy

Under this policy a milk recording service is provided for owners of grade or mixed herds who belong to dairy herd improvement associations, each of which must have from 22 to 24 members. The supervisor assigned to an association must visit each member once per month and at the time of every visit must weigh the milk produced by each cow at each of two consecutive milkings and test a composite sample obtained therefrom. This information is forwarded to the Ontario Live Stock Branch, where it is used in computing individual lactation records.

In addition, the supervisor is required to obtain data covering the cost of producing milk and income derived from its sale. These data are analysed by the Farm Economics Branch, after which each member receives a report covering the cost of producing milk on his farm, and the average for all farms in the Association. Thus he is in a position to know whether his costs are above or below average and why.

A summary of the results obtained in 1956 follows:

Number of Associations .....	59
Number of herds enrolled .....	1,363
Number of cows enrolled .....	27,555
Average number of cows per herd .....	20
Number qualifying for production certificates .....	13,463
Average production per cow — milk .....	9,061
Average production per cow — fat .....	324
Average butter fat test .....	3.58%

1,175 of the 1,363 members of D.H.I.A. Associations are using the services of Artificial Insemination centres. Consequently a great many of the animals in their herds are daughters of bulls owned at these centres. Thus it is possible to use the information provided by these records in the bull proving program. The results in

1956 indicate that the daughters of A.I. bulls are out-producing their contemporaries in the same herds by a significant margin, as evidenced by the following table:

No.		Milk	Fat
2089	2-yr. old daughter of A.I. bulls .....	8,566 lbs.	303 lbs.
2465	2-yr. old daughter of non A.I. bulls ..	8,056 "	282 "
1653	3-yr. old daughter of A.I. bulls .....	9,185 "	326 "
2318	3-yr. old daughters of non A.I. bulls ...	8,766 "	308 "
949	4-yr. old daughters of A.I. bulls .....	10,078 "	361 "
2176	4-yr. old daughters of non A.I. bulls ...	9,736 "	341 "
743	Mature daughters of A.I. bulls .....	10,657 "	381 "
5572	Mature daughters of non A.I. bulls ....	10,147 "	350 "

Unfortunately, all bulls tracing to illustrious ancestors are not herd improvers. Hence in many cases young bulls bought by A.I. centres are used sparingly until an analysis of the type and production of their daughters can be made. After their reputations have been established they are used regularly or discarded, depending on the performance of their progeny. Today every A.I. centre has a well organized bull proving program based on D.H.I.A. records.

#### Northern Ontario Freight Assistance Policy

In an effort to encourage farmers in Northern Ontario to improve the type and quality of their live stock, grants to cover all or a portion of the freight charges are available to those who purchase breeding animals in Old Ontario. When shipments consist of six or more head, the grant amounts to 100 per cent of the freight or trucking, whichever is the lesser, and the return railway fare of the buyer or his agent; on smaller lots the grant is equal to 50 per cent of the freight or trucking, whichever is the lesser.

During 1956-57 freight assistance was paid on 75 shipments, included in which were 632 cattle. Sixty-one of these shipments contained 6 or more head. Of the total, 70 were made by truck, only 5 lots moving by rail.

These shipments were moved to destinations in the Northern Districts as follows:

To Algoma .....	24 shipments
" Nipissing .....	17 "
" Sudbury .....	9 "
" Temiskaming .....	8 "
" Cochrane .....	7 "
" Manitoulin .....	4 "
" Thunder Bay .....	2 "
" Parry Sound .....	2 "
" Kenora .....	1 "
" Muskoka .....	1 "

#### Warble Fly Control

When two-thirds of the cattle owners in a township sign petitions attesting to the fact that they are in favour of treating their cattle for warble fly, the council is obliged to pass a by-law requiring all cattle, except those specifically exempted, to be treated in accordance with the Warble Fly Control Act and the regulations.

Under the Act, cattle over three years of age that are free from warbles and calves born after September 1st of the previous year are exempt. All other cattle must be treated twice — once between the 1st and 18th of April, again between the 28th of April and the 18th of May. Cattle owners have the option of treating by the brush or the spray method. In townships where the majority express a preference



for spraying the council usually obliges by making spray equipment available, either through purchase or as the result of an agreement with a private operator.

This programme has been expanding gradually, with the result that every year treatment is placed on a compulsory basis in a few new townships. In 1956, 243 townships located in 36 counties or districts carried on control programmes. According to reports submitted by the inspectors for these townships, 1,358,722 cattle received their first treatment in April, while 1,344,568 were treated during the time prescribed for the second treatment.

In each of these townships the council was required to appoint an inspector to enforce the by-law and to make warble fly powder available to the cattle owners. In return, councils are eligible for grants equal to 50 per cent of the salary and expenses of the inspection and 50 per cent of the cost of the powder. The grants paid to these townships in 1956-57 totalled \$74,853.06.

### Brucellosis Control Act

When the Brucellosis Act, 1956 was proclaimed on October 1st, all townships in which by-laws had been passed under its predecessor, the Brucellosis Control Act, 1953, were designated supervised areas. Thus it became mandatory for all cattle owners in those townships to have their female calves vaccinated within the ages of six and eight months. Instead of having to bear the cost of vaccination as had been the case previously, the Province of Ontario assumed that expense.

In the months that followed, petitions signed by an overwhelming majority of the cattle owners in a high percentage of the remaining townships were received by the Live Stock Commissioner. Consequently the Province of Ontario was designated a supervised area on April 1st, 1957. Thus Ontario became the first province to adopt compulsory vaccination and in so doing took a very important step in the direction of bringing Brucellosis under control.

Coincident with the proclamation of the Brucellosis Act, 1956 all matters pertaining to the administration came under the jurisdiction of the Live Stock Commissioner and the Provincial Veterinarian. Thus all certificates of vaccination are now filed in the office of the Live Stock Branch instead of at the Ontario Veterinary College as formerly. In addition, all supplies required by veterinarians, such as certificate forms, ear tags and vaccine, are now ordered from and distributed by the Provincial Veterinarian.

Details with regard to the number of calves vaccinated in each of the past two years are shown in the following table:

<i>Month</i>	<i>Number of calves vaccinated</i>	
	<i>1956</i>	<i>1955</i>
January .....	37,462	20,652
February .....	16,581	17,831
March .....	13,113	15,102
April .....	16,108	20,045
May .....	24,660	22,184
June .....	14,171	8,934
July .....	7,132	12,261
August .....	14,890	9,654
September .....	18,063	16,829
October .....	28,586	20,828
November .....	49,392	42,544
December .....	64,141	38,060
Total .....	304,299	244,924

At the 1957 session of the legislature the Brucellosis Act, 1956 was amended to provide for the vaccination of calves after reaching the age of four months but before becoming 11 months of age. Thus the age at which calves may be vaccinated in Ontario coincides with that authorized by the Health of Animals Branch, Canada Department of Agriculture.

## HOGS

In 1956, Ontario hog marketings totalled 2,196,306, which figure represented an increase of 9.9 per cent over the previous year. Except for 1952, marketings were the highest for any peace-time year in the province's history. These larger numbers of hogs were produced by fewer farmers, thus indicating a definite trend towards greater specialization.

Perth was again the leading producer, with marketings of 201,697. Included in the group of counties marketing over 100,000 hogs were Waterloo, Huron, Wellington, Bruce, Simcoe, Grey and Oxford, in that order.

From the standpoint of quality, Ontario's hogs registered a slight improvement — 33.5 per cent A's as compared with 32.0 per cent in the previous year. Bruce was the leader with 40.3 per cent; other counties marketing over 36.0 per cent A's were Grey, Lanark, Perth, Waterloo, Renfrew, Peterborough, Ontario and Halton. While this improvement in quality is gratifying, the percentage of top grade hogs still remains well below the relatively high standard that prevailed at the conclusion of World War No. 2.

## Bacon Hog Clubs

Good sires provide the keystone to any live stock improvement programme. Under the Bacon Hog Club Policy an attempt is being made to place good boars in locations where they will be used by members of the community. Accordingly any organized group comprised of six or more farmers owning at least 20 sows may lease a boar from the Ontario Live Stock Branch by the payment of a nominal rental fee. In so far as possible only boars of advanced registry breeding are placed in these clubs.

22 Clubs were organized during the year, thus bringing the total number of active clubs up to 134. The 67 boars purchased for new Clubs and as replacements in old Clubs cost \$6,132.50.

## Boar Premium Policies

During recent years there has been a tendency for more farmers to maintain boars and restrict their use to their own herds. This is undoubtedly due to the fear that disease may be transmitted to a herd either by taking sows to a neighbour's boar or by allowing the neighbours to bring their sows to the farm of the boar owner. Hence the incentive to buy good boars is provided for farmers who share such views, through the Boar Premium Policies.

Under one of these policies every person who buys an approved boar at a consignment sale sponsored by a breeders' club is eligible for a premium equal to 20 per cent of the purchase price but not exceeding \$25.00. If the boar is out of a qualified dam the basic premium is supplemented by \$10.00.

During the year 75 approved boars, sold in sales at which the policy applied, brought an average of \$112.97. Premiums paid in the fiscal year amounted to \$1,940.

Under the other premium policy, grants are paid to owners whose boars have proven their ability to sire a high percentage of Grade A hogs. Premiums are on a sliding scale with the highest amounts being paid for the most outstanding performances. In 1956-57 premiums amounting to \$130.00 were paid to the owners of 2 boars.

### Swine Sales

Swine Breeders' Clubs are eligible for grants to assist in defraying expenses incurred at consignment sales held under their auspices. This grant, which amounts to \$2.00 per animal sold, only applies in cases where the animals comprising the offering are inspected and approved by a representative of the Branch. In 1956-57 grants totalling \$508.00 were paid to the 8 Clubs that held consignment sales.

### SHEEP

Sheep production in Ontario, in common with that of most other provinces, has followed a downward trend during recent years. As a result lamb consumption has declined to the point where each Canadian is eating on the average less than 4 pounds. Even so, it was necessary to import over eight million pounds of lamb to provide this meager ration.

Ontario's lamb marketings in 1956 totalled 181,337 head. Only three counties, namely Grey, Simcoe and York, marketed over 10,000 head. Despite the fact that sheep production has been at least as profitable as that of any other branch of the live stock industry, there is no apparent evidence of any increase in the size or number of sheep flocks.

### Ram Premium Policy

Farmers who buy approved rams at consignment sales held under the auspices of Breeders' Clubs are eligible for a premium equal to 20 per cent of the purchase price but not exceeding \$25.00. In 1956-57 premiums amounting to \$602.80 were paid to the purchasers of 61 rams.

### Dog Tax and Live Stock Protection Act

Under this Act every municipality is required to compensate owners of sheep and cattle for losses caused by dogs, such losses being determined by the valuer for the township. If either the owner or the township council is not satisfied with his award, the dissatisfied party may appeal to the Minister of Agriculture for a provincial valuer and the award of such valuer is final and conclusive. The majority of cases are settled at township level. However, a few appeals are received every year, the number in 1956-57 being 3. In all these cases sheep were involved.

At the 1957 session of the legislature the Act was amended in such a manner as to require the payment of compensation to poultry owners suffering losses as the result of their flocks being attacked by dogs, provided the quantity involved amounted to 50 pounds or more. Furthermore, the name of the Act was changed to read "The Dog Tax and Cattle, Sheep and Poultry Protection Act".



## HORSES

The horse can truly be described as a victim of the age of mechanization. On a great many farms draught horses are no longer kept and very few farmers keep more than one team. On the other hand, there appears to be a renewed interest in horses that can perform on the race track or in show rings and in ponies that provide so much pleasure and training in horsemanship for small children and some grown-ups as well. As evidence of this trend it might be pointed out that of the 472 stallions enrolled in 1956, 103 were standard breds, 57 were thoroughbreds and 50 were Shetland ponies. In contrast to this there were 43 Clydesdales, 72 Percherons and 55 Belgians.

### Stallion Enrolment Act

This Act contains the authority for regulating the type and quality of the stallions standing for public service in Ontario. Under its provisions no person may offer a stallion for use or sale until it has been inspected, approved and enrolled. Following inspection every stallion is classified by the Stallion Enrolment Board into Class A, B, C or Rejected. Generally speaking the classification applies for the three years following inspection. Thus, except in special cases, stallions only require inspection once in every three-year period.

Owners of Grade A and B stallions are eligible for premiums based on the number of mares left with foal. In the case of Grade A stallions the premium is \$3.00 per in-foal mare and in the case of Grade B stallions \$2.00 per in-foal mare. In 1956-57 premiums paid to owners of Grade A stallions was \$9,858 and to Grade B stallions \$1,264. All premiums paid by the Ontario Live Stock Branch were duplicated by the Canada Department of Agriculture.

### Horse Shows

The sponsors of special horse shows may obtain grants from the Live Stock Branch in amounts equal to 50 per cent of the prize money paid out, but not exceeding \$300 per show. In cases where all shows in a county have been combined into a county show, the grant may be increased to \$500, provided that a similar amount is granted by the county council. In 1956 grants were made in the amounts specified to the sponsors of the following shows:

Uxbridge Kinsmen's Club Show .....	\$300.00
Toronto Horse Show Association .....	300.00
Elgin Horse Breeders' Association .....	148.00
St. Catharines Riding & Driving Club .....	500.00
Middlesex Heavy Horse Show .....	100.00
North Blenheim Horse Breeders' Association .....	300.00
Brooklin Spring Fair .....	300.00
Galt Horse Show Association .....	300.00
Cannington Agricultural Society .....	300.00
The Lynden Horse Breeders' Association .....	300.00
Linwood Spring Show .....	300.00

## GENERAL

### Community Sales

Under the provisions of the Health of Live Stock Act, no person may operate a Community Sale without a licence from the Commissioner. Before a licence is granted, the premises in which sales will be held must be equipped in a proper

manner for holding live stock. In addition, they must have concrete or asphalt floors, thus facilitating the task of cleaning and disinfecting, operations which must be performed before every sale.

Every licenced operator is required to engage a veterinarian to examine all live stock delivered to his premises and to reject any that in the opinion of the veterinarian is diseased or has been exposed to animals that are diseased.

In 1956, licences were issued to 57 operators, whose premises were inspected periodically by a member of the Live Stock Branch staff.

### **Subsidized Veterinary Service**

In order to ensure veterinary service in Northern Ontario it has been found necessary to provide some monetary inducement. This is being done through the medium of a policy worked out between the Live Stock Branch and the local municipalities or organizations. The Branch grants one dollar for every dollar contributed locally up to a maximum of \$1,600 and the amount so contributed is paid to the Veterinarian in accordance with the terms of an agreement entered into between himself and the local supervising committee. Under most of these agreements the Veterinarian is required to provide service at a uniform price basis throughout the district. Thus a party living 60 miles from the headquarters, who might otherwise be denied the services of a veterinarian because of the high cost involved, obtains it at the same rate as those more fortunately situated.

In 1956, grants totalling \$20,133.33 were paid to 13 local veterinary associations.

### **The Live Stock Branding Act**

This Act provides a means whereby an owner of cattle or poultry may register a brand for his exclusive use. The fee for registering a brand is \$1.00 and entitles the person to whom it is issued to use it for three years, at the end of which time it must be renewed, otherwise it elapses and after the period of one year may be issued to another person.

During 1956-57, 214 brands were allotted to cattle owners and 21 brands were issued to poultrymen.

## *Farm Labour Service*

The farm labour programme in Ontario for 1956-1957 was under the supervision of a Committee named by the Minister in accordance with conditions set out in the Farm Labour Agreement between the Federal Minister of Labour and the Ontario Minister of Agriculture.

A high level of employment in the industrial and construction fields continued to draw on the farm labour force. The farm labour shortage in some sections of the Province was the most acute since the war years.

### Committee Membership — 1956

DR. C. D. GRAHAM, Deputy Minister, Ontario Department of Agriculture

J. A. CARROLL, Assistant Deputy Minister, Ontario Department of Agriculture

J. A. GARNER, Director of Extension, Ontario Department of Agriculture

B. G. SULLIVAN, Regional Superintendent, Canada Unemployment Insurance Commission

W. DAVISON, Agricultural Adviser, National Employment Service

J. D. MCFARLANE, District Superintendent of Immigration, Canada Department of Citizenship and Immigration

The programme of the farm labour service embraced the following divisions:

1. The placement of immigrants.
2. The movement and placement of harvest workers from the Maritime and Western Provinces, and harvest workers from Ontario to Western Canada.
3. The movement of skilled tobacco workers from the United States.
4. The recruitment of day-by-day workers from urban centres.
5. The recruiting and movement of workers to private Camps in sugar beet areas and fruit districts.

### Immigrants

The number, and time of arrival, of immigrant farm workers was disappointing. The 229 men who arrived in Ontario were quickly placed; but, unfortunately, many were attracted to other fields of employment within a short time.



**Short-Term Placement**

	1955	1956
Maritime Workers to Ontario .....	396	424
Western Workers to Ontario .....	234	40
Ontario Workers to Prairies .....	1,039	500
Tobacco Curers and Workers — U.S. to Ontario ...	1,556	3,682
Sugar Beet Workers — Quebec to Ontario .....	.....	137

**Day-By-Day Service**

	<i>Female</i>	<i>Male</i>	1955	1956
Workers Placed .....	510	489	1,212	999
Total Days Worked .....	11,047	5,773	19,774	16,820
No. of Growers Assisted .....	.....	.....	83	76

**Assistance to Private Camps**

Workers were recruited for three private Camps in the fruit area but, because of unfavourable weather conditions and subsequent crop losses, only one Camp — the D'Arcy Crop Camp at Niagara Falls — employed workers for the crop season.

One hundred and thirty-seven (137) men were recruited in the Province of Quebec to assist in beet blocking operations. The men were located in three Camps operated by the Canada and Dominion Sugar Company in Southwestern Ontario.

## *Statistics and Publications Branch*

The Statistics and Publications Branch compiles statistics on all phases of Agriculture in the province. The Branch works in close co-operation with the Agriculture Division of the Dominion Bureau of Statistics, Ottawa, to ensure efficiency and economy, to keep the number of forms filled out by farmers at a minimum and to help ensure the uniformity of agricultural statistics across Canada. Duplication of effort is also eliminated by these arrangements.

Approximately 80,000 schedules dealing with agricultural subjects are processed each year by the Statistics and Publications Branch. Dairies, creameries, cheese factories and fruit and vegetable processors are required to supply regularly statistical data on their operations. A special survey is also undertaken twice each year at June 1st and December 1st from which estimates of acreages of field crops and live stock population numbers are made. More than 10,000 farmers in Ontario co-operate with the Department of Agriculture by completing schedules for their own farms for each of these surveys. A corps of approximately 2,000 farm correspondents regularly returns questionnaires dealing with prices of agricultural products, crop conditions, expected yield, etc. The Statistics and Publications Branch is extremely grateful to this large number of individuals and firms for their continued co-operation in this statistical work.

This large number of schedules is processed by a variety of methods. Where all the producers or processors of a product are known, as for example in the case of fluid milk plants, cheese factories, processors of fruit and vegetables, etc., total figures are obtained by simple arithmetic. However, when a sample is taken at random from producers, that is, when only a percentage of the total producers report, as in the case of the June and December Surveys, more complex statistical procedures are used. These processes are handled with the greatest care so that the final estimate will be as accurate as possible.

All statistical information gathered is published in one of four regular reports issued by the Branch. These are The Monthly Crop and Live Stock Report, The Monthly Dairy Report, The Seasonal Fruit and Vegetable Report and the Branch's annual report — Agricultural Statistics for Ontario. These reports are distributed free of charge to anyone asking to have his name and address placed on the mailing list.

The Monthly Crop and Live Stock Report is published each month from May to January inclusive. It contains timely information on a county basis relating to the acreage of crops, progress of seeding, development during the growing season, yields obtained, live stock numbers, current prices obtained by farmers for their produce, weather data and other related material.

The Monthly Dairy Report, together with a March Supplement, contains statistics relating to various phases of the dairy industry. Monthly schedules are obtained from all creameries, cheese factories, dairies, ice cream manufacturers and concentrated milk plants, showing the quantities of various dairy products made and handled during the month. Tables are prepared from these schedules showing for Ontario the production by county, of creamery butter and cheddar cheese, the sales by market area of fluid milk and cream, chocolate dairy drink, buttermilk and skim milk, and a provincial total only for the output of condensed, evaporated and powdered milk products. Other tables show the average monthly wholesale price of butter

and cheese at Toronto and the prices charged farmers for dairy feedstuffs at London and Ottawa.

The Seasonal Fruit and Vegetable Report is prepared by the Ontario Fruit and Vegetable Statistics Committee comprising officials of the Dominion Fruit Branch, the Dominion Bureau of Statistics and the Ontario Department of Agriculture. There are seven issues of this report each year, dealing with crop conditions, average yields, current prices of produce and market conditions. Purchases of Ontario-grown fruit and vegetables by processing firms in this province appear in the February and May issues of this report.

The Annual Statistics Report contains the latest yearly figures of production for all phases of farming and is designed to show a statistical picture of the agricultural situation in Ontario. The first part of this report shows the gross value of production and cash income from farming operations, prices received for farm produce and estimates of fruit and vegetables and dairy production. The second part shows the acreage, production and value of field crops by county division. The third part shows the estimated number and value of each class of live stock on farms by county. There are also sections showing chattel mortgages outstanding, detailed weather data, together with a summary of crop production and live stock numbers yearly for the period from 1902 to date.

This Branch also is responsible for the printing and distribution of Department of Agriculture reports, bulletins and circulars. Single copies of these publications are available, without charge, to residents of Ontario. A small charge is made to non-residents and to residents wishing bulk lots of any one bulletin or circular. A list of available publications may be obtained by writing to the Statistics and Publications Branch, Ontario Department of Agriculture, Toronto.

Since 1944 a Departmental Publications Committee, appointed by The Minister, has been responsible for recommending policy changes and supervising procedures in the preparation of manuscripts and distribution of publications.

#### Committee Membership 1956

Dr. C. D. Graham, Deputy Minister.  
 Dr. J. D. MacLachlan, President, Ontario Agricultural College, Guelph.  
 Dr. T. L. Jones, Principal, Ontario Veterinary College, Guelph.  
 Dr. E. F. Palmer, Director, Horticultural Experiment Station, Vineland.  
 J. C. Steckley, Director, Western Ontario Agricultural School and Experimental Farm, Ridgetown.  
 A. M. Barr, Principal, Kemptville Agricultural School.  
 W. P. Watson, Live Stock Commissioner.  
 T. R. Hilliard, Director of Extension.  
 A. H. Martin, Director, Field Crops Branch.  
 Miss H. M. McKercher, Director, Home Economics Service.  
 S. H. H. Symons, Director, Statistics and Publications Branch.  
 F. M. Baker, Director of Publicity.  
 Chairman: J. A. Garner, Chief Agricultural Officer.

During the fiscal year 1956 the following literature was printed:

Annual Reports	<i>No. of Copies</i>
The Report of the Minister of Agriculture .....	2,000
The Entomological Society of Ontario .....	2,000
The Ontario Horticultural Societies .....	3,000



The Ontario Agricultural Societies .....	3,000
Report of the Ontario Agricultural College and Experiment Farm .....	900
The Ontario Soil and Crop Improvement Association .....	10,000
The Ontario Plowmen's Association .....	1,000
Report of the Ontario Veterinary College .....	2,200
Report of the Stallion Enrolment Board of Ontario .....	1,000
Agricultural Statistics for Ontario .....	6,700
Calendar of the Kemptville Agricultural School .....	2,500

### Bulletins

#### Serial No.

327	Knots and Splices .....	20,000
418	Hints on Judging Field Crop Seeds, Field Roots and Potatoes .....	20,000
484	Guide to Production of High Quality Milk .....	20,000
504	Frozen Foods .....	15,000
506	Horses .....	10,000
507	House Plants and Gift Plants .....	10,000
508	Plants Causing Live Stock Poisoning in Ontario .....	7,500
509	Beef Husbandry in Ontario .....	10,000
513	The Strawberry in Ontario .....	20,000
514	Let's Cook It Right .....	20,000
515	Farm Ponds .....	15,500
516	Growing Winter Wheat in Ontario .....	10,000
517	Cattle Lice and How to Control Them .....	15,000
518	Oven Meals .....	10,000
519	Dairy Husbandry in Ontario .....	25,000
520	Modern Milk Houses .....	2,300
21	Soil Survey Report of New Liskeard - Englehart Area, Temiskaming District .....	1,950
22	Soil Survey Report — Lambton County .....	3,000
23	Soil Survey Report — Ontario County .....	3,000
	Report of the Ontario Beef Pasture Committee .....	10,000

### Extension Circulars

#### Serial No.

24	Trouble Shooting in the Binder Knotter .....	5,000
75A	A Guide to Chemical Weed Control — Field Crops .....	16,000
75B	A Guide to Chemical Weed Control — Horticulture Crops .....	5,000
75C	A Guide to Chemical Weed Control — Roadside and Waste Places .....	10,000
75D	A Guide to Chemical Weed Control — Herbicides .....	10,000
79	Good School Lunches .....	30,000
83	Your Food and Your Figure .....	20,000
248	Fibres for Fabrics .....	10,000
293	Grape Production Costs .....	5,000
294	Raspberry Production Costs .....	5,000
296	Field Crop Recommendations for 1957 .....	25,000
300	Fertilizers for Intertilled Crops .....	20,000
	Insect and Diseases Section of The Strawberry in Ontario .....	1,000
	Pest Control for Garden Vegetables .....	15,000
	Market Services to Agriculture .....	20,000
	Ontario Farm Account Book .....	14,000
	Any Time is Fruit and Vegetable Time .....	30,000
	Poultry — Serve It Often .....	20,000
	Farm Lease for Cash Rental .....	3,000
	Farm Lease for Share Rental .....	3,000
	Poultry Diseases Leaflets 1, 2, 13, 20, 5 and 16 .....	12,000

## *The Provincial Apiarist*

During 1956 there were only 977 (or 1.7 per cent) colonies infected with American Foulbrood out of the 56,833 colonies inspected by Ontario Apiary Inspectors.

During this inspection work colonies in 3,614 apiaries were examined.

The above-mentioned number of American Foulbrood infected colonies — 977, or 1.7 per cent of the total number of colonies inspected — is the lowest on record in the last two decades. This has been the result of a sound yearly inspection policy, consisting of an early spring check-up before bees have much opportunity to fly, a routine inspection during May and June, and again in September, together with the recommended use of sodium sulfathiazole as a disease preventative.

The following table shows the reduction in the number of colonies of American Foulbrood 1952 - 1956, inclusive:

<i>Year</i>	<i>Colonies Inspected</i>	<i>Colonies Destroyed</i>	<i>% Disease</i>
1952.....	53,686	3,540	6.5
1953.....	52,166	2,872	5.5
1954.....	47,009	2,020	4.2
1955.....	59,983	2,288	3.8
1956.....	56,833	977	1.7

During 1956, 3,298 beekeepers registered 5,820 apiaries, consisting of 141,587 colonies. The numbers of colonies and apiaries are reduced from the last year due to previous poor honey crops and a severe winter loss during 1955-56.

Eighty (80) disease samples were diagnosed. Approximately 176 permits were issued for selling and moving colonies and equipment. Thirty-six (36) permits were issued for moving 3,747 colonies for pollination of fruit, greenhouse and legume crops.

The honey crop in 1956 totalled 5,760,000 pounds. The western part of Southern Ontario from Oshawa to Collingwood and south produced very little honey. The interest in beekeeping in that area is very low at the present time.

### INSPECTION AND REGISTRATION OF COLONIES OF BEES

<i>County</i>	<i>INSPECTION</i>				<i>REGISTRATION</i>	
	<i>Apiaries</i>		<i>Colonies</i>		<i>Apiaries</i>	<i>Colonies</i>
	<i>Inspected</i>	<i>Diseased</i>	<i>Inspected</i>	<i>Diseased</i>		
Algoma .....	9	0	118	0	9	112
Brant .....	82	6	1,049	22	88	1,688
Bruce .....	19	1	197	1	231	8,450
Carleton .....	89	9	3,007	21	162	4,429
Cochrane .....	40	1	682	1	29	405
Dufferin .....	37	2	568	24	63	1,872
Dundas .....	47	2	793	10	63	1,186
Durham .....	89	14	1,027	52	103	2,220
Elgin .....	105	5	1,310	14	157	3,186
Essex .....	143	22	1,468	81	185	2,707
Frontenac .....	10	0	98	0	66	1,332

County	INSPECTION				REGISTRATION	
	Apiaries		Colonies		Apiaries	Colonies
	Inspected	Diseased	Inspected	Diseased		
Glengarry	34	9	1,038	34	72	3,464
Grenville	13	1	294	1	64	1,197
Grey	78	15	1,598	66	273	9,531
Haldimand	36	2	884	13	156	4,117
Haliburton	7	0	36	0	7	43
Halton	7	1	122	2	111	2,936
Hastings	135	9	1,585	27	201	6,339
Huron	86	3	3,781	10	212	6,576
Kenora	No	Inspection			5	22
Kent	119	6	953	12	126	1,947
Lambton	126	21	1,704	50	234	5,472
Lanark	4	0	43	0	83	2,610
Leeds	49	2	1,076	3	87	2,169
Lennox & Addington	12	0	192	0	85	2,942
Lincoln	98	3	716	5	153	2,113
Manitoulin	No	Inspection			15	117
Middlesex	156	20	2,836	84	220	5,975
Muskoka	4	0	20	0	16	128
Nipissing	No	Inspection			15	81
Norfolk	93	6	976	9	97	964
Northumberland	105	2	1,511	82	156	3,131
Ontario	154	4	3,077	19	151	2,750
Oxford	110	6	1,517	12	115	2,477
Parry Sound	No	Inspection			21	317
Patricia	No	Inspection			1	1
Peel	52	14	769	27	142	3,337
Perth	59	3	1,503	6	120	3,565
Peterboro	60	3	914	7	87	1,959
Prescott	77	6	1,856	21	71	3,992
Prince Edward	76	13	1,230	55	63	1,193
Rainy River	28	0	367	0	36	866
Renfrew	63	8	856	12	106	2,845
Russell	80	3	826	8	55	913
Simcoe	161	12	3,160	24	283	6,914
Stormont	24	3	969	4	75	2,488
Sudbury	No	Inspection			1	4
Thunder Bay	No	Inspection			12	71
Timiskaming	22	1	875	11	47	1,658
Victoria	68	0	706	0	88	2,264
Waterloo	105	5	1,235	15	119	2,339
Welland	162	13	1,326	20	164	1,854
Wellington	123	8	1,756	12	148	4,197
Wentworth	162	13	1,662	26	135	2,172
York	196	26	2,547	74	236	3,950
TOTAL	3,614	303	56,833	977	5,820	141,587

## ONTARIO HONEY CROP FOR 1956 IN POUNDS PER COLONY

County	Colonies in Thousands	CLASS OF HONEY			
		White	Golden	Amber	Dark
Algoma	0.0	20	10	—	—
Brant	1.5	5	20	5	—
Bruce	8.5	5	5	5	—
Carleton	4.5	30	10	15	5
Cochrane	0.5	30	15	—	—
Dufferin	2.0	20	—	10	—



County	Colonies in Thousands	CLASS OF HONEY			
		White	Golden	Amber	Dark
Dundas .....	1.0	65	30	---	---
Durham .....	2.0	20	5	15	---
Elgin .....	3.0	5	10	---	---
Essex .....	2.5	30	5	5	---
Frontenac .....	1.5	35	---	---	---
Glengarry .....	3.5	40	30	---	15
Grenville .....	1.0	15	10	20	---
Grey .....	9.5	10	5	---	---
Haldimand .....	4.0	5	5	---	---
Haliburton .....	0.0	30	---	---	---
Halton .....	3.0	10	15	10	---
Hastings .....	6.5	60	5	5	---
Huron .....	6.5	15	5	5	---
Kenora .....	0.0	---	50	---	---
Kent .....	2.0	20	10	5	---
Lambton .....	5.5	25	10	10	15
Lanark .....	2.5	35	10	5	5
Leeds .....	2.0	35	5	5	---
Lennox & Addington	3.0	50	---	10	10
Lincoln .....	2.0	---	5	5	---
Manitoulin .....	0.0	10	15	---	---
Middlesex .....	6.0	15	5	---	5
Muskoka .....	0.0	40	---	---	---
Nipissing .....	0.0	No report	---	---	---
Norfolk .....	1.0	---	5	10	5
Northumberland .....	3.0	45	10	10	5
Ontario .....	3.0	25	5	10	5
Oxford .....	2.5	5	5	---	5
Parry Sound .....	0.5	30	25	---	---
Peel .....	3.5	40	5	---	---
Perth .....	3.5	20	---	---	---
Peterboro .....	2.0	50	10	---	---
Prescott .....	4.0	15	10	---	---
Prince Edward .....	1.0	15	10	5	---
Rainy River .....	1.0	65	---	---	10
Renfrew .....	3.0	60	---	---	10
Russell .....	1.0	20	10	5	---
Simcoe .....	7.0	35	15	5	---
Stormont .....	2.5	35	10	10	10
Sudbury .....	0.0	No report	---	---	---
Thunder Bay .....	0.0	35	---	---	---
Timiskaming .....	1.5	25	10	---	---
Victoria .....	2.5	40	5	10	---
Waterloo .....	2.5	15	10	---	---
Welland .....	2.0	---	10	10	5
Wellington .....	4.0	35	10	10	---
Wentworth .....	2.0	20	15	10	---
York .....	4.0	40	10	5	---
Average production		---	---	---	---
per colony .....		25	8	5	3
Total number of					
Colonies .....	141.0				
Crop for province					
weighted by colony					
populations .....		3,585,000	1,135,000	687,500	252,500
Total Crop .....				5,760,000 Pounds	

## *Provincial Entomologist*

The duties of the Provincial Entomologist were carried out in co-operation with the Department of Entomology and Zoology, Ontario Agricultural College, Guelph.

The 1956 season was one with relatively few major insect problems. However, some pests such as June beetles, seed-corn maggot, garden slugs, European corn borer, apple maggot, and the European pine shoot moth were problems. Assistance was given in control of these and other pests.

Trapping for the Japanese beetle was continued in southwestern Ontario in an area extending from Sarnia and Windsor to Toronto. Thirty-two acres in Windsor where beetles were obtained in numbers greater than those of 1955 were treated in May with 10 per cent dieldrin granulated. This work was in co-operation with the Canada Department of Agriculture.

### REGULATORY DUTIES

The Provincial Entomologist under the Director of the Ontario Fruit Branch was in charge of certain "Plant Diseases" under the Plant Diseases Act. Although the sugar beet nematode is no longer regulated by this Act, a short survey of this pest was made in the Sarnia area of Lambton county. There was no apparent increase in this pest. Growers appeared to be using the recommended longer crop rotation to control it.

### Nursery Inspection

Licences were issued by the Ontario Fruit Branch for the operation of 219 nurseries and to 57 dealers in nursery stock in 1956. The total stock inspected was 5,070,630, of which 320 were infested with San Jose scale, 163 with fire blight and 147 with black knot. The infested plants were destroyed.

The inspection included that of many other insects and diseases that were not under Regulations of the Plant Diseases Act. Proper treatment was applied against these pests. Some diseases present in greater amounts, caused by the unusual amount of wet weather, included leaf spots, apple scab and peach leaf curl.

### Apple Maggot

Regulations and survey work were carried out by the Ontario Fruit Branch and the Canada Department of Agriculture. Apple maggot infestations were generally high following the growing season of 1955—the year with the lowest infestation since 1949. Thus factors such as weather have a great effect on the percentage of the fruit that becomes infested, and it would appear that the percentage of infested fruit is higher with a moderate or light crop than with a heavy crop.

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*Ontario Agricultural Statistics*  
Publications



PROVINCE OF ONTARIO



# Report

OF THE MINISTER OF AGRICULTURE

FOR THE YEAR ENDING MARCH 31, 1958





CANADIAN

-153

REPORT OF THE  
MINISTER OF AGRICULTURE





Ontario Department of Agriculture

**REPORT**  
OF THE  
**MINISTER OF AGRICULTURE**  
PROVINCE OF ONTARIO

FOR THE YEAR ENDING MARCH 31, 1958





DEPARTMENT OF AGRICULTURE  
PROVINCE OF ONTARIO

---

TO THE HONOURABLE LT.-COL. JOHN KEILLER MACKAY, D.S.O.  
*Lieutenant-Governor of Ontario.*

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture  
for the year ending March 31, 1958.

I have the honour to be, sir,

Your obedient servant,

W. A. GOODFELLOW,  
*Minister of Agriculture.*

Toronto, March 31, 1958.



# ONTARIO DEPARTMENT OF AGRICULTURE ORGANIZATION CHART

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Experimental & Demonstration Farms & Stations

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Kemptville Agricultural School, Kemptville  
A. M. BLAIR, Principal  
Miss M. G. Miller, Secretary  
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MILK PRODUCTS DIVISION  
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Miss O. Wickware, Sec. Rm. 4508 Tel. 21091

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Miss I. M. Wintersburn, Sec. Tel. 21421

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FIELD ASSISTANTS  
HOME ECONOMISTS

COUNTY & DISTRICT OFFICES  
Agricultural Representatives  
Associates  
Assistants

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DAIRY HERD IMPROVEMENT  
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DR. W. H. UPSHALL, Director  
Miss I. G. Burkholder, Secretary  
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Experimental & Demonstration Farms & Stations

COLLEGES and  
EXPERIMENTAL STATIONS  
of the ONTARIO  
DEPARTMENT OF AGRICULTURE

- *Educational*
- *Research*
- *Demonstration*



## *Ontario Agricultural College*

The College's three-fold obligations to education, research, and extension place heavy responsibilities upon the faculty throughout the entire year. At no time in the history of the College has there been the pressure for both fundamental and applied research on agricultural problems. Research has now become a major endeavour on the part of the faculty.

It is expected that the new Soils Building will be available for use before the beginning of the 1958-59 academic session. This much-needed building should greatly increase our opportunities to contribute to the soils work of the Province. The new Physical Education Building, which should be ready for use during the summer of 1958, contains greatly improved facilities for the meetings, conferences, and field days which are held so often at the College by the farm public. Construction of the new Biology Building should begin during the coming summer.

### COURSES AND ATTENDANCE

In the Degree Course, additional subjects were offered by the Departments of Botany and Engineering Science. In the latter department a Civil Engineering Division was introduced to enable fourth year students upon graduation to continue for a fifth year at the University of Toronto for the degree of Bachelor of Applied Science. The teaching of courses in Dairy Chemistry was transferred from the Department of Chemistry to the Department of Dairy Science. In the Department of Entomology and Zoology fourth year students in the Wildlife Management Option may now choose electives in either Fisheries or Wildlife Management. Several courses for the students in the Associate Diploma Course were revised. Several new courses were given by various departments to the students of the Graduate School and of the various Short Courses. One new Short Course was offered by the Department of Apiculture.

In the undergraduate courses in Agriculture, 611 students were enrolled; in the Associate Diploma Course there were 146, in the course leading to the degree of Bachelor of Science in Agriculture there were 458, and in addition there were seven special students. Students proceeding to the degree of Master of Science in Agriculture in the Graduate School numbered 60. The total attendance for the year at Macdonald Institute was 199; of these, 40 were registered in the one-year Diploma Course and 159 were enrolled in the course leading to the degree of Bachelor of Household Science. Short Courses dealing with a great variety of subjects and varying in length from a few days to three months were held at different periods throughout the year. The attendance in Special and Short Courses was 2,048; the grand total attendance in all courses was 2,918.

### ACADEMIC FUNCTIONS

#### Baccalaureate Service

On Sunday, March 24, 1957, the annual Baccalaureate Service for the graduating classes of the Ontario Agricultural College, the Ontario Veterinary College, and Macdonald Institute was held in War Memorial Hall. The baccalaureate address was delivered by the Reverend J. Ray Houser, A.B., B.D., D.D., President and Dean

\* For further information on the work carried out at the College consult the published annual reports of the Ontario Agricultural College.



of the Lutheran Theological Seminary, Waterloo, Ontario. Many parents of the graduating students attended.

### Graduation for Associate and Diploma Courses

Graduation exercises for the Ontario Agricultural College and Macdonald Institute Associate and Diploma Courses were held on Wednesday, May 15, 1957. The students were addressed by the Honourable W. A. Goodfellow, Minister of Agriculture for the Province of Ontario. Diplomas were presented to 55 graduates of the O.A.C. two-year Associate Diploma Course, and to 34 graduates of the Macdonald Institute one-year Diploma Course.

### Convocation for Degree Students in Agriculture and Household Science

The degree of Bachelor of Science in Agriculture was conferred on 71 students, and the degree of Bachelor of Household Science on 32 students at the annual convocation exercises held on May 17, 1957, in War Memorial Hall. The degrees were conferred by Dr. Samuel Beatty, M.A., Ph.D., LL.D., F.R.S.C., Chancellor of the University of Toronto; the convocation address was delivered by Albert W. Trueman, M.A., LL.D., D.Litt., F.R.S., Director of the Canada Council.

### NEW SCHOLARSHIPS, PRIZES, AND AWARDS

Among the many awards and grants made during the year were the Pfizer Canada grant of \$2,500.00 for research in poultry nutrition; the Soft Phosphate Research Institute, Inc., grant of \$1,000.00 for research on poultry involving experiments with phosphorus supplements; the Atkinson Charitable Foundation bursary of \$400.00 to enable a foreign student to continue graduate studies; a contribution of \$250.00 from the Imperial Oil Limited to one of the departments of the College in appreciation for conducting an agricultural short course; the Canada and Dominion Sugar Co. grant-in-aid of \$2,000.00 for research on sugar beets; the National Cancer Institute of Canada grant-in-aid of \$2,031.50 for research on the effect of anti-lactic dehydrogenase on experimental and clinical leukemia; and a National Research Council grant-in-aid of \$1,675.00 for research on the origin and nature of variation in *S. scabies*.

### EVENTS OF THE COLLEGE YEAR

#### Visit of the Governor-General

On April 9, the campus was honored by a visit by the Governor-General of Canada, His Excellency, the Right Honourable Vincent Massey, C.H. His Excellency was introduced to the student body in War Memorial Hall, before attending a reception in Community House, and a dinner in his honor in Creelman Hall.

#### Farm and Home Week

The annual Farm and Home Week brought more than 14,000 farmers, students, and other visitors to the campus from June 11 to June 14. The program featured a series of floats depicting modern farm management.

#### Annual Alumni Reunion

Graduates of the Ontario Agricultural College and Macdonald Institute and their families to the number of more than 1,000 attended the annual meeting and

reunion of the O.A.C. Alumni Association on June 21 and 22. A special program for teenagers was a new feature of this year's meeting.

### Remembrance Day Service

The annual Remembrance Day Service was held on November 11, 1957, in War Memorial Hall with a large attendance of the faculty and students of the three colleges. The speaker was Squadron Leader, the Reverend H. S. Lowrey, of Burlington, Ontario.

### Death of Dr. W. R. Graham

Dr. W. R. Graham, who retired in 1940 after 41 years of service as Head of the Department of Poultry Husbandry, died at his home in Burlington on January 8, 1958, in his 83rd year.

Known as the father of Canada's modern poultry industry, Dr. Graham's influence was international in its scope. He was a fellow of the Agricultural Institute of Canada and of the Poultry Science Association, and was the only Canadian member of the American Poultry Industries Committee. In 1938 the University of Toronto conferred on him the degree of Doctor of Science, and in 1955 his portrait was hung in the Poultry Industry Hall of Fame at Maryland University. The Poultry Building at the O.A.C. was named "Graham Hall" in his honor.

### 50th Anniversary of the Agricultural Representative Service

On June 27, the Agricultural Representative Service celebrated its 50th anniversary at the College. The occasion was marked by the presence of many distinguished guests, and exhibits were shown depicting a half-century of service to Ontario agriculture. Dr. T. G. Taggart, Deputy Minister of Agriculture for Canada, addressed the gathering.

### Distinguished Visitors

Distinguished visitors to the College during the year included: Dr. B. Schwartz and Dr. L. C. Heemstra, United States Department of Agriculture; Brigadier General Wayne O. Kester, United States Air Force; Mr. D. S. Suri, Assistant Live Stock Officer, Ministry of Foods and Agriculture, New Delhi, India; Dr. Mochizuke, Japan; Mr. S. D. Pant, India; Mr. Colin Rose, Southern Rhodesia; Miss Sofia C. Boafo, Assistant Director of Education for Women, Ministry of Education, Accra, Ghana; Sir William Slater, Secretary, Agricultural Research Council; Dr. K. W. Neatby, Director, Science Service, Administration and Laboratories, Ottawa; Dr. A. W. Trueman, Director of the Canadian Council; Dr. R. F. Montgomerie, Director, Veterinary Research, Wellcome Laboratories; Dr. F. S. Mustard, Hospital for Sick Children, Toronto; Professor Haring, Gatteringer University, Bonn, Germany; Mr. W. Busby, Secretary, British Friesian Society; Mr. A. R. Saunders, University of Natal, Union of South Africa; Dr. Joseph Edwards, Chief Production Division, Milk Marketing Board, Great Britain; Mr. G. F. Smith, Chief Veterinarian, Milk Marketing Board, Great Britain; Dr. Hugh Miller, Director of Agriculture, Jamaica, B.W.I.; Mr. Jan Bozanczyk, Director of Mechanization, Ministry of Agriculture, Warsaw, Poland; Dr. Andrew Stewart, President, University of Alberta; Dr. Werner Knapp, Germany; Mr. Guillermo Mascarenhas, Buenos Aires, Argentina; Mrs. Rachele Shapiro, Principal of Hadassim College, Israel; Dr. Armistead, President, American Veterinary Medical Association; Mr. Harold Braimayer, Head of Research, U.S.D.A.; the Minister of Agriculture of Rumania, and his Deputy;

Mr. Ricardo Christopherson, Head, Statistical Dept., Ministry of Agriculture, Uruguay, S.A.; and Mr. C. H. De Fries, Assistant Director of Marketing, Queensland, Australia.

### Groups and Conferences

During the year over 40,000 people visited the College, representing every phase of the agricultural industry in the Province. Of this number a large proportion were young people. Over 600 Junior Farmers met for their Annual Conference in March, and more than 1,000 attended the annual field day in June. The inter-county judging competitions in October brought over 700 4-H Club boys and girls to the College. In October, 60 senior students from 20 high schools were invited to spend a week end at the College. In May, nearly 2,000 students of the Teachers Colleges in the Province visited the College, and High School Open House brought 200 students from 25 high schools. Nearly 1,000 high school students were the guests of the College students at the annual College Royal in March. In July, a refresher course for agricultural teachers was held. Young farmers from England, Scotland, and Ireland were guests of the College during the summer, and 32 French agricultural students from Paris were welcomed in July. A group of Russian agronomists, and a group of Hungarian agriculturists visited various departments.

The Federated Women's Institutes of Ontario celebrated their 60th Anniversary at the College in May, with 900 rural women in attendance. The Women's Institute Holiday in July brought an additional 150 women to the campus for a week of learning and recreation. Nearly 800 live stock men, representing various breed associations, met for field days during Live Stock Week in June. One hundred and fifty bankers and others interested in farm loans attended the Farm Finance Conference in May. Other groups holding meetings, conferences, or short courses during the year included: The Ontario Seed Processors; Community Centres Administrators; Canadian Florists Association; Canadian Association of Nurserymen; Ontario Pest Control Operators; Gladiolus Growers; the Poultry Industry School; Royal Canadian Golf Association; Ontario Food Processors Association; the Ontario Dairy Goat Society; Co-operative Managers; Ontario Poultry Confederation; Ohio State County Agents; New York State Dairy Farmers; Quebec Turkey Farmers; and the School for Rural Clergymen.

First events of their kind in Ontario held at the College during the year included: the first Canadian Potato Conference; the first Conference on the Economic Aspects of Land Use; the first Seed Processors Short Course; the first Coaching School; the first Canadian Seed Trade Association Conference; the first meet of the Central Western Ontario Secondary Schools Association.

### Changes in Senior Staff

On the superannuation of Professor W. H. Sproule, who has been Head of the Department of Dairy Science since 1932, Dr. D. M. Irvine of that department became his successor. Others who retired after many years of service were Professors C. W. Riley and W. M. Drummond of the Department of Agricultural Economics, and Associate Professor Robert Keegan of the Department of Field Husbandry.

### STUDENT ACTIVITIES

Favored by ideal weather, the attendance at the College Royal was the highest in its history and included over 1,000 high school students who were invited to the College for the day. The programs and exhibits were of a very satisfying quality,



and the Curtain Call program was presented to large audiences for three nights. In addition to the regular program of the Student Christian Movement, this organization co-operated with a special committee appointed by the Union Council to arrange a Religion and Life Week. This was held at the beginning of the winter term and brought to the campus a number of religious leaders. The Council was also responsible for arranging two series of lectures for the students, one on philosophy in the fall term and one on comparative religion in the winter term. The Union Philharmonic Society carried out the usual series of Sunday Nine O'Clocks and a Christmas Concert by the Choral Club; in the winter term it was host to the Inter-University Choral Festival which brought to this campus the choral groups of the Universities of Western Ontario, McMaster, and Toronto to join the local group in a delightful evening of music. The J. Lockie Wilson Memorial Trophy for inter-year debating was won by Years '57 and '58 of Macdonald Institute, who defeated representatives of Years '57 and '58 O.A.C. in the final debate. The Union Literary Society debaters lost to the University of Toronto in the semi-final of the Inter-University Debating League series. Previous inter-university debates had been held with Victoria College and McMaster University. The annual public speaking contest was held on College Royal English Night. In dramatics the program was a limited one, consisting of only two one-act plays which were presented in the fall term. Since the Visual Arts Society has ceased to arrange for visiting exhibitions of paintings, the Department of English has taken over this activity and had six exhibitions displayed in Massey Hall, each for a period of several weeks.

## TRAINING FOR THE ARMED SERVICES

Officer cadets were trained for the three armed services. Although the number of students taking part in these schemes was small, it is felt that the calibre of these young men and women is improving. The program was divided into two parts, the first being given at the College during the academic year, the second in training ships and establishments in Canada, the United States, Great Britain, and other NATO countries during the vacation.

## RESEARCH AND DEVELOPMENTAL ACTIVITIES

The following report records major accomplishments in research and allied developmental activities during the 1957-58 fiscal year.\*

### SOIL AND WATER

#### Soil Surveys

Detailed reconnaissance soil surveys and correlation studies were continued, with the co-operation of the Experimental Farms Service, Canada Department of Agriculture, in the Counties of Wentworth (150,000 acres), Lennox and Addington (250,000 acres), Frontenac (600,000 acres), and Leeds (50,000 acres).

Soil maps and reports Nos. 22, 23, 24, and 25 for the Counties of Lambton, Ontario, Glengarry, and Victoria were published, as was a detailed soils and land use survey of Louth Township, Lincoln County.

Additional data were obtained for the purpose of mapping trace mineral deficiency areas in Ontario, and 55 soil samples were analysed for available boron and molybdenum.



### Soil Fertility

In greenhouse trials, limestone of particle size greater than 10 mesh was less effective than finer materials in increasing the soil pH and the yield of alfalfa. In a field study on acid clay soil, calcite limestone reacted more quickly in the soil and gave higher yields of alfalfa than did dolomite limestone of similar particle size applied at the same time. Application of lime on the surface of an acid soil, without incorporating it with the soil, gave no increase in yield of alfalfa, but limestone incorporated with the top two to six inches of soil was effective in increasing yields.

In regional fertilizer trials, average results indicated that the following rates of fertilizer application gave the most profitable returns:

**OATS** — following corn or other cereals — 200 lbs. of 10-10-10 per acre.  
— following grass-legume sod — 100 lbs. of 0-20-20 per acre.

**WHEAT** — following corn or other cereals — 250 lbs. of 10-10-10 per acre.  
— following grass-legume sod — 125 lbs. of 0-20-20 per acre.  
Nitrogen, applied as top-dressing in the early spring on winter wheat, gave three to five bushels more per acre than the same amount applied at the time of seeding.

**CORN** — following corn or other cereals — 600 lbs. of 10-10-10 per acre.  
— following grass-legume sod — 400 lbs. of 0-20-20 per acre.

Differences in corn yields obtained by fertilizer placement with a conventional split-boot planter, as compared to those obtained with an experimental placement machine, were statistically significant on only one of three soil types, namely Peel clay, but confirmed the previous finding that placement with the split-boot machine gave higher yields in all cases.

Regional trials with potatoes indicated that band placement of fertilizer to the side and below the seed piece was more effective than broadcast application.

Top dressing new seedlings in the fall with phosphorus fertilizer, at the rate of 30 lbs. of  $P_2O_5$  per acre, increased yields of first year hay in several trials.

A rotation study, average of five years, showed that manure applied in the winter was less effective in increasing the yields of corn than when applied in the spring. Manure at the rate of ten tons per acre applied before corn, increased yield of all crops in the rotation.

A laboratory study showed that alternate freezing and thawing caused a significant breakdown in aggregates of Haldimand clay under blue grass sod at several moisture contents. The rate of breakdown increased with increasing moisture content.

Potassium-supplying power was not affected by previous fertilization or cropping. Drying of soil samples caused a significant change in soil potassium level as measured by soil test.

Nitrate-supplying power of soils, measured by a recently developed incubation method, was found to correlate well with measured yields of oats, wheat, and potatoes in the field.

An improved phosphorus soil test was introduced into the soil testing laboratory in July.

\* The Ontario Agricultural College wishes to acknowledge, with appreciation, the whole-hearted co-operation of other research groups, both federal and provincial.

The crop rotation study on Haldimand clay showed that sod crop in the rotation increased the soil aggregation. However, there was no correlation between degree of soil aggregation and yield of crops.

Application of dolomitic lime, at the rate of three tons per acre, increased the calcium and magnesium content in sandy loam soil in the third year, and the pH increased from 5.8 to 6.7. This liming did not decrease the availability of boron in the soil.

Ten pounds of fritted trace elements (Fn - 502) per mature apple tree increased the boron, manganese, molybdenum, and especially the iron content of apple leaves in the Collingwood area.

Nitrogen, up to 144 lbs. per acre (actual N) did not have detrimental effects on Autumn Spice Onions, but applications beyond 36 to 48 lbs. per acre were of no benefit in a three-year trial.

A three-year trial has shown that 100 lbs. of  $\text{CuSO}_4$  per acre, applied annually, increased the onion yield significantly in 1957. No differences were noted in other years with this crop. Differences in yield were not observed with carrots or lettuce in any year, for any rate of application.

The development of semi-selective media for the isolation of thermophilic actinomycetes in compost has resulted in the isolation of various obligate and facultative thermophiles, the nutritional requirements of which have been determined.

Preliminary studies have shown that some dithiocarbamate fungicides added to the soil, at a fixed amount, affect the rate of respiration of soil micro-organisms, some increasing and others decreasing the rate.

Further data on correlation between nitrifying populations and nitrification in forest soil have been obtained. While part of the rapid disappearance of nitrite-nitrogen on perfusion through acid forest soil may be due to oxidation by a chemical process, the results suggested that most of it was being adsorbed onto the soil.

### Soil Erosion

Soil material eroded from plots at the Hydrology Station contained 30 per cent more organic matter, 100 per cent more phosphorus, and 25 per cent more potassium than the surface soil remaining on the plot area.

### Irrigation and Hydraulics

The following instruments for making agrometeorological measurements were designed, constructed, and tested: (1) two floating lysimeters for continuous recording of evapotranspiration, (2) a lift and horizontal traverse frame for space averaging the measured gradients in temperature, wind velocity, and vapor pressure near the ground; and (3) a photographic recording system for time-integrated values of microclimatic variables.

As part of a run-off study, a preliminary investigation of techniques for solar radiation measurements and heat flow measurements was conducted on a watershed.

A thermostatically controlled irrigation unit was installed to go on automatically when the temperature drops to  $34^\circ\text{F}$ . Its effectiveness was evidenced by death of

tomato plants because of frost in the radius of a plugged sprinkler when the temperature dropped to 30° F. one night.

When "super hotents" were used, both the early and total yield of all tomato varieties were increased by over 100 per cent. Black polyethylene mulch only increased early yield about 25 per cent.

A plot of corn, covered with plastic, produced satisfactory yields using only the moisture stored in the soil at planting time, with no additional water from rainfall or irrigation. Evaporation from the non-covered soil surface amounted to at least one-half of the total water used by the corn crop.

The coefficients of uniformity in field tests made with a small plot irrigator ranged from 0.69 to 0.75. With a wind shield the coefficient was 0.90.

Examination of a vinyl plastic pond liner, placed two years ago at the Tobacco Sub-Station at Delhi, indicated that it was in excellent condition except for slight deterioration at the water line.

### Weather Records

An analysis of the variability of daily maximum and minimum temperatures and monthly precipitation at Guelph, for the years 1901 to 1956, was made. Ranges were constructed about the average values above and below which future readings are expected to occur only one year in ten.

Five-day normals for temperature were calculated from data collected from 60 Weather Stations in Ontario.

### Drainage

Strength and absorption tests were carried out on random samples of 10-4" drain tile supplied by 40 different manufacturers.

## CROPS

### Foliar Fertilization

Foliar fertilization did not increase yields of potatoes or oats at several locations on mineral soils and muck soils.

### General

Field crop recommendations for the six climated regions of Ontario were published on the basis of the regional testing program carried out by provincial and federal experimental stations.

### Forage Crops

A seeding rate of 1½ bushels per acre was found to be the most suitable seeding rate for oats used as a companion crop to a hay-pasture mixture and is recommended for use on the average farm. This rate provided a satisfactory forage seedling population and adequate seedling vigor, and at the same time, produced as high oat yields as did higher rates of seeding. Higher oat seeding rates reduced forage seedling stands and vigor, especially in years with a severe soil moisture deficiency. More vigorous forage seedlings were produced when oats were drilled in rows 14 inches apart instead of the usual seven inches. This wide row spacing is recommended for farms with a critical problem in establishing hay-pasture mixtures.



Ladino clover and red clover reduced the longevity and vigor of alfalfa in hay-pasture mixtures formulated with commonly used seedling rates of these legumes. Ladino was more aggressive toward alfalfa than red clover. The recommended seeding rate of ladino used as the secondary legume in alfalfa-based mixtures, on soils of good moisture holding capacity, was reduced from two pounds to one-half to one pound per acre.

Orchard grass was found to be too aggressive toward the brome grass and timothy in the recommended general purpose hay-pasture mixtures which include timothy, orchard grass, and brome grass as the grass components. Timothy and brome grass were compatible so the recommended mixtures were revised, omitting orchard grass.

A four-year study on row width and rate of seeding in timothy seed production indicated that pedigreed seed should be grown in rows 14 inches apart rather than in the seven inch rows used by Ontario seed growers. Seed yields for the 14 inch rows averaged 100 pounds per acre more than those from the seven inch row. Seed quality was satisfactory, and roguing was facilitated in the wider rows. Seeding rate did not affect seed yield or quality.

Red clover plants were treated with gibberellin, and subjected to photoperiods of 13, 15, 16, and 18 hours in light chambers. At 13 hours there was elongation of the stem for 10 to 14 days. A secondary crown formed, and when these plants were given 18 hours photoperiod, flowers were produced. This indicated that the 13 hour treatment did not cause differentiation of flower primordia. At 15 hours photoperiod, stems elongated and flowered, while check plants remained vegetative. However, non-treated plants, with low temperature or long day pre-treatment, also flowered under this same photoperiod. The growth increase from gibberellin at 18 hours was about the same as for plants under 13 hours.

Bacteriological analyses and greenhouse tests on 33 commercial legume inoculants showed that, while many were heavily contaminated with actinomycetes, only six were entirely unsatisfactory for seed inoculation purposes.

Analyses for crude protein were made on 96 samples of six varieties of timothy, in connection with the breeding program.

### Other Field Crops

The spring barley breeding programs at the Ontario Agricultural College and the Central Experimental Farm were combined into a single integrated program.

In artificially induced tetraploid barley, continuous selection for fertility over four generations did not change the fertility levels. Cytological studies revealed that a high percentage of the tetraploids had an abnormal chromosome number. The differences in fertility among tetraploid strains could not be completely explained by abnormal chromosome distribution during flowering. Genetically controlled physiological sterility also influenced the fertility of autotetraploid barley.

In 20 high and low yielding strains from five barley crosses, the yield component kernels per spike contributed 52.9 per cent to yield differences, tillers per plant contributed 27.3 per cent, and 1,000 kernel weight 19.8 per cent.

The evaluation program was completed on a new mildew and stem rust resistant feed barley which was licensed under the name York and distributed to Elite Growers in Ontario.

A new, red winter wheat resistant to loose smut and leaf rust was licensed under the name Kent and distributed to Elite and Registered Seed Growers.



In an investigation of straight combining of corn, the canvas table used on a model of the "straight through" type of combine was found to be unsatisfactory for harvesting corn planted in 14, 28, and 42 inch rows.

### Tree and Small Fruits

Naphthaleneacetamide at 20 p.p.m. was effective in thinning Fameuse, Spartan, and McIntosh apples when applied at petal fall. Secor and Golden Delicious were not sufficiently thinned by this treatment, but naphthaleneacetic acid at 20 p.p.m. applied 10 days after full bloom, was effective.

### Vegetables

Dry matter content of Katahdin potatoes grown on seven different soils for two years was increased somewhat by phosphorus, slightly decreased by nitrogen, and consistently decreased by potassium fertilizer applications. On the other hand, a "consumer preference index" based on a sensory evaluation of texture, flavour, and colour of the cooked tubers was increased, to some extent, by both phosphorus and potassium, and was variable for nitrogen. The differences in dry matter content or in consumer preference index, because of fertilizer treatment, were small in relation to those associated with differences in soils and weather.

Potato seedling tests included 583 unselected lots. Seven were saved for future testing. Of the new and standard varieties under test, Huron and Delus were worthy of continued trial.

As in previous years, tissue samples were collected from affected plants where deficiencies of trace elements were noted or suspected. Whiptail of cauliflower and low molybdenum content of soils have been found on additional farms. Experiments and observations, made in the Burlington area, indicated that an application of two pounds of sodium molybdate per acre controlled whiptail of cauliflower and has had a satisfactory residual effect on sandy loam soil for the following three years. Application of sodium molybdate at the rate of one ounce per 20 gallons of water and using one cup of this solution per plant at transplanting, has had a satisfactory effect for a year.

Gibberellic acid treatment, in the early spring, of several determinate varieties of tomatoes resulted in a lower yield because of fewer and smaller fruits. Treatment of Utah Salt Lake celery with about 100 p.p.m., three weeks before harvest, increased petiole length and stalk diameter, and gave increased yields up to 24 per cent. A group of Delicious 51 and Iroquois muskmelons was treated with 100 p.p.m. of gibberellic acid at the time of field setting, and another group was treated similarly but, in addition, the same concentration was applied once a week for four weeks. Increases of 25 to 36 per cent were observed in early yield, and 28 to 30 per cent in total yield, respectively. Gibberellic acid, applied to the leaves of muskmelons when the first true leaf was about one inch in diameter, did not result in significant yield differences, but there was a tendency to increased early and total yields when the acid and "hotents" were used. Takii Gem watermelons showed an increased early yield of about 22 per cent when 100 p.p.m. of gibberellic acid was applied, and increases in total yield of 54, 51, and 35 per cent resulted with single treatments of 10 and 100 p.p.m., and five weekly treatments each of 10 p.p.m., respectively. The increased yields with both watermelons and muskmelons were due to an increase in fruit number.

Of 10 varieties of cabbage tested, Early Round was earliest, and Pennstate Ballhead was the most satisfactory late variety. A clubroot resistant selection, 1922 - 55L, proved to be late, fairly uniform, and highly resistant to the destructive fungus.

Summer Harvest was the first early cauliflower and one of the best samples tested. Westlandia Originale was, by far, the most susceptible to clubroot.

Of 11 carrot varieties, Nantes Select was most productive of marketable roots, but was shorter than desirable. Nantes Special Long had roots nearly  $1\frac{1}{2}$  inches longer with excellent colour. Gold Pak was outstanding in appearance but low in yield.

Utah 16-11 celery was an outstanding sample of this vegetable, both in appearance and in resistance to internal petiole darkening in storage.

Compared to the standard Imperial 456, Great Lakes 659 G was the one lettuce variety definitely worthy of further trial.

Autumn Spice onions showed up well in maturity and uniformity and, for the first time in seven years, outyielded all other varieties and hybrids tested. Highlight and Hybrid 45447 were the most promising alternatives to Autumn Spice.

There was, for the first time, a definite trend towards early vegetable types which were of value for processing. Of the 58 sweet corn hybrids studied, many which excelled were such old fashioned hybrids as Carmelcross (80 days), and Golden Cross Bantam (101 days). Processing types were also found in the extra early brackets, especially the hybrids Sunrise (73 days) and Golden Beauty (74 days). Eight new extra early lima beans, all valuable for processing, were found. The first extra early tomato of value for canning purposes was the variety Rhode Island Early (51 days). The pole bean variety, Blue Lake Bush, was found to be the first eastern substitute for the valuable Pacific coast variety Blue Lake. Ontario commercial rhubarb growers were provided with varieties grown along the Pacific coast, as these "stand up" under chain store lights.

Sweet corn N K — 199 had extra deep kernels and yielded a cutting per cent of 41.5 while the total solids were 19.78. The Mammoth Wonder tomato had non-cracking fruits, averaging over one-half a pound apiece. Planted on June 6, they commenced to ripen on July 30.

Tomato plants, of three varieties, were grown at Vineland and Guelph, without low temperature treatment in the pre-planting stage. The data suggested that polyethylene mulch increased both early and total yields more with Fireball than with Harrow or Moreton Hybrid. At Vineland, but not at Guelph, a further increase in yield was obtained when both the polyethylene mulch and a hormone spray (Duraset 20 W) were used with the Harrow and Moreton Hybrid varieties.

A chromosomal mapping study was made of Xanthophyllous, a dominant yellow-leaved tomato variety. The genotype Xaxa was lethal in both the seed or very early seedling stage, while the genotype Xaxa is viable but reacts differently to light intensity than does the normal Xaxa green plant. Green plants make only limited response to changes in light intensity, whereas Xaxa plants, under similar conditions, become green and cannot be distinguished from Xaxa plants. At intensities of 600 to 3,000 ft.-c. the Xaxa plants show a linear trend of decreasing pigment (increasing yellowness) with increasing light intensity.

In the study of hybridization through the use of male sterility, two tomato types have been found promising in  $F_1$  hybrid work, one being the variety Harrow, and the other having a genetic factor  $gs$  or "green stripe." To reduce the cost of producing hybrid seed, a factor  $sL$  or "stamenless" has been rogued to the point where it acts as a monofactorial recessive. This factor is being transferred to the Harrow variety. A tomato type, Filipino Xe, which will set fruit parthenocarpically at  $50^\circ F$ , and possibly lower, has been found. Seed of the Valentine rhubarb variety



was placed under irradiation treatment with X-rays and with thermal neutrons. A significant increase in the death of seedlings was observed with X-ray treatments at, and above, 20,000 X. Mortality also increased rapidly with thermal neutron treatments at, or in excess of, at 15 hour duration. To obtain cucumber lines with low seed content, colchicine treatments were used. Of 133 resulting fruits, 79 were seedless.

### Flowers

Fifty-five new gladioli seedlings were tested. The performance and characteristics of each seedling were recorded during the flowering season and a rating given. Three were rated A—, 23 at B+, 14 as B, 8 as B—, and 2 as C. Five were not rated.

Propagating stock of one lily selection was distributed. It is a tall variety with yellow, outward-facing flowers, derived from a series of crosses between seedlings of *Lilium tigrinum*, *L. Willmottiae* and *L. hollandicum*. A number of seedlings from crosses, previously made, are being grown for evaluation.

### Greenhouse Operation

Growth of a crop of chrysanthemums, planted in a greenhouse in September, was satisfactory and appeared to be much better than normal until flower bud initiation. All terminal buds set flower buds but these did not develop, and the lateral buds on each plant produced vegetative shoots instead of initiating flower buds. There were no flowers from this crop. It appeared that the infra-red rays were resulting in too high tissue temperature for flower bud development. Soil temperatures under these burners were 8 to 10° higher than those in steam-heated greenhouses, with the resultant necessity of more water, especially during the early stages of the crop. The higher soil temperatures caused an increase in root development, immediately after the planting of the crop. Better young plants resulted. The extra water required and the increased plant growth necessitated a heavier feeding program.

The electronic leaf or sensitizing element, in use as the automatic control on the mist frame in the greenhouse, has "stood up" well, showing no signs of mechanical breakdown.

Several varieties of tomatoes were grown in each of two greenhouses, one with controlled misting system. The few fruits that developed blotchy ripening or a similar abnormality were picked from plants not grown under mist.

### Nursery Stock

Observations made on the container production of nursery stock showed that all plant material overwintered well with the exception of a 50 per cent loss of *Daphne cneorum*. The plants grown in full sun were stronger and more attractive in appearance than those grown under lath, the exception being *Taxus cuspidata* for which the reverse was true. From April until the first week of July, the plants were subjected to the elements and were not watered or fertilized. They were able to withstand considerable drying, and although they did not show much growth, they did not die. After that period they were fertilized, watered regularly, and hardened off for the winter months, the cans being left unprotected.

Softwood cuttings from two species of shrubs, forsythia "Spring Glory" and *Ligustrum ovaliform*, were soaked for 24 hours in solutions of gibberellic acid containing 10, 20, and 40 p.p.m. Comparable trials were conducted using gibberellic acid in talc at the same concentrations. G.A., in talc, had little or no effect. In solution, the lowest concentration gave slight inhibition of root growth as compared

with untreated cuttings. At the highest concentration, rooting was decidedly inhibited. With concentrations of 20 and 40 p.p.m. there was a significant increase in apical elongation of the cutting, but only in the forsythia.

### Storage Operation

The original unit for automatic ventilation constructed in 1952 is still operating satisfactorily. Icing of the power-operated dampers under low temperature conditions has never been a problem. Sixteen electronic controllers and 40 ventilation units of the College design are in operation in fruit, vegetable, and nursery storages in the Province.

## LIVE STOCK

### Breeding

A summary of four years of classification records involving 70,504 cows, as reported by the official inspectors of the Holstein-Friesian Association of Canada, has been completed. Of these cows, 0.23 per cent were graded excellent, 4.61 per cent very good, 42.80 per cent good plus, 43.26 per cent good, 9.03 per cent fair, and 0.05 per cent poor, so that 47.6 per cent of all cows graded good plus or better. Break down figures compared with those of previous summaries indicated some improvement in body capacity and dairy character. Of the 62 defective characteristics listed on the classification score card, the most frequent were high pelvis, sickled legs, toeing out of rear feet, and low thurls.

The relationship between type and production of Holstein-Friesian cows in Canada has been under continued investigation, the present study involving the records of 9,469 two-year old cows on R.O.P. and classified under the Selective Registration program. Considering the overall type classification, there appeared to be a definite positive relationship between milk and butter fat production and type as shown in the following table:

Type Rating	No. of Records	Mature Equivalent		Breed Class Average	
		Milk (lbs.)	Fat (lbs.)	Milk %	Fat %
Excellent _____	3	17,710	650	153	152
Very Good _____	197	13,955	527	120	123
Good Plus _____	4,153	12,524	468	107	109
Good _____	4,155	11,722	437	99	101
Fair _____	956	11,176	416	94	96
Poor _____	5	11,533	430	98	100

The first summary of detailed type characteristics of Guernsey cows in Canada has been completed. This summary, based on 1,547 cows, indicated that undesirable characteristics such as heavy shoulders, high pelvis, low thurls, sickled legs, and short front udders are most frequent, since 31, 25, 22, 30 and 30 per cent, respectively, of the cows were marked as possessing these characteristics. Characteristics such as weak fore attachment of udder, low rear attachment of udder, close teats, and low pins were present in 16 to 20 per cent of the cows inspected.

A study to determine the number of daughters required to give a reliable indication of the inheritance for type in a dairy bull indicated that some definite selection can be made between bulls on the basis of their first 20 daughters. Bulls with progeny averages close to the breed average (47 per cent good plus or better) require more than 20 daughters before a definite appraisal of their transmitting ability can be made. Very little change was noticed in subsequent progeny reports after a bull had 50 daughters.

A study of the production performance of daughters of bulls used in D.H.I.A. herds in Ontario was continued with reports, based on two-year old records only,



presented for 242 Holstein, 14 Ayrshire, 11 Jersey, and 5 Guernsey bulls, all having 10 or more daughters. Progeny averages for milk production ranged from 4,617 to 10,739 pounds, and the average percentage butter fat from 3.14 to 5.43. These results indicated that there are large differences between the production performance of sire progeny groups, of which some are genetic. Fifty-three per cent of the bulls studied sired daughters with production performance better than other two-year olds in the same herds, indicating the use, by breeders, of bulls with better than average transmitting ability for production.

Performance data on the beef herd were collected to provide a basis for selection of replacement stock as well as to provide data for long time studies on type and performance in beef cattle. Averages for each breed for the year were as follows:

Breed	Birth Weight	Weaning Weight	14 Month Weight
Shorthorn .....	62 lbs.	460 lbs.	806 lbs.
Hereford .....	62 lbs.	455 lbs.	823 lbs.
Aberdeen Angus .....	55 lbs.	438 lbs.	758 lbs.

Under the performance testing program for beef bulls, 47 Hereford, 33 Scotch Shorthorn, and 6 Aberdeen Angus bulls were tested for rate and economy of gain. No appreciable differences were evident between average final weights of Shorthorn and Hereford bulls, though the results indicated that Shorthorns had heavier weaning weights whereas Herefords were superior in rate and efficiency of gain on feed. Greater differences in final weights and total gain were observed among individuals within breeds than between breeds. High weaning weights did not appear to influence rates of gain during the feeding period.

Six beef cows were injected with 1,000 I.U. of equine gonadotrophin in an attempt to induce twinning. All 6 were bred and 5 subsequently slaughtered. Two had twin calves *in utero*, 1 had 1 calf *in utero* but 2 ovulation spots on the ovary, and 2 had single calves with 1 ovulation spot on the ovary.

During the year, the brood sows in the herd produced 77 litters, averaging 10.2 pigs each, for a total of 789 pigs farrowed. The average total birth weight per litter was 28.5 pounds, and the average individual birth rate was 2.8 pounds.

The value of an electric type "lean-meter" for determining the back fat thickness of live market hogs has been tested on 165 hogs by probing at shoulder, middle of back, and loin, prior to slaughter, and comparison with actual measurement of carcass back fat thickness. The correlations were not as high as desired for practical use.

### Nutrition

Brome and orchard grass pastures for beef cattle were compared using 30 steers on 6 plots. Total gains for 15 steers on each pasture were: brome—2,068 pounds, Orchard — 2,014 pounds. Over a three-year period, the difference in pounds of beef produced per acre was 59 pounds in favour of the brome grass pasture.

A trial, using 14 steers in 2 lots of 7 each, was conducted to investigate the advisability of feeding grain to fattening steers on pasture. During the 90-day pasture period, the lot receiving grain *ad libitum* consumed an average of 10 pounds per head per day, and gained 0.80 of a pound more per head per day than the controls receiving no grain. On slaughter, the grain-fed steers brought 6 cents per pound more than the controls.

In a study of implantation versus feeding, as methods of administering stilbestrol to fattening steers, 8 steers receiving 10 milligrams per day orally averaged 2.75

pounds (8 per cent) daily gain over controls which averaged 2.54 daily gain, and 8 given 30 milligrams subcutaneously averaged 3.10 pounds daily gain (a 22 per cent increase). Economy of gain was increased 6 per cent in stilbestrol fed steers, and 14 per cent in implanted steers over controls. The treatments had no significant effect on trucking shrink, hide weight, carcass grade, or 72-hour cooler shrink.

Nine suckling lambs on pasture, implanted with 15 milligrams of stilbestrol subcutaneously, gained, on the average, 10.5 pounds, as compared to 7.7 pounds for 9 untreated lambs during a 24-day period. No adverse side effects from the treatment were noted.

In a veal calf feeding experiment 32 male Holstein calves were used for eight different treatments, consisting of: whole milk, pail fed; whole milk fed for three weeks, then reconstituted skim-milk; milk replacer; and nurse cows; each with and without supplements. Calves on nurse cows made the fastest daily gains (2.44 lbs.), while calves on milk replacer were slowest to gain, the average for all treatments being 1.70 pounds per day. Supplementing with hay and concentrates increased the rate of gain of milk replacer and skim-milk fed calves only, and increased dressing percentage in skim-milk fed calves more than in the others. Nursed calves had the highest dressing percentage (60.0), the average of all other calves being 54.2 per cent. Market prices were highest for the whole milk-fed calves (\$22.72 per 100 lbs. live weight). However, under the conditions of the experiment, the calves fed skim-milk supplemented with hay and concentrate were the most profitable.

Twelve barrows treated with various levels of testosterone, by subcutaneous implant, showed no effect in rate of gain or carcass characteristics as compared with four control barrows.

The value of grass silage as part of a ration for rearing brood sows was compared with a commercial sow ration, using 16 pigs. The bred gilts receiving grass silage did not gain as well as the control lot, nor did they show as much bloom. Cost per pound of gain was the same for both lots, and the number of pigs born, the birth weights, and weaning weights of pigs born to the brood sows were not significantly different in the two treatments.

Twenty-four pairs of pigs were used to study the effect of pelleting swine rations. Pigs fed the pelleted ration made approximately the same rate of gain on 3 per cent less feed, but had lower carcass scores than the pigs on the control rations. The saving in feed did not pay for the cost of pelleting or compensate for the lower carcass grades.

Three herds of young cattle and seven herds of milking cows in Eastern Ontario were fed, *ad libitum*, a mineral supplement containing 1 gram of  $\text{Cu SO}_4$  per ounce. Four other herds were fed two mineral supplements in separate compartments in a mineral box, one being a commercial cattle mineral, and the other a mineral supplement, similar in composition of the major ingredients, containing 2 grams of added  $\text{Cu SO}_4$  per ounce. The average consumption of the two groups was about the same, and the cattle in the second group ate approximately equal amounts of the commercial mineral and the copperized supplement. Cattle which had been fed the copperized mineral for several years prior to these trials consumed less mineral and maintained a higher copper level in their blood than those animals which had been fed the copperized minerals for only a few months prior to the *ad libitum* feeding trial. The efficacies of the two methods of providing additional copper were about the same.

During the year samples of blood from 32 additional herds in Eastern Ontario were analysed for serum copper. The blood levels in 16 herds were found to be below normal and the owners were advised to feed copperized mineral.



A Holstein cow which had been fed 7 grams of sodium molybdate daily for 3 years was killed. The external symptoms of molybdenum toxicity exhibited by this animal were greying of the black hair coat and intermittent scouring. These symptoms appeared periodically for periods of 2 to 3 months and then disappeared, to reappear later. Weekly blood analyses showed a normal serum copper level but a high level of molybdenum. At the end of the trial, the liver was found to contain a high amount of molybdenum and a lower than normal amount of copper.

The feeding of copper sulphate to 2 groups of 2 cows each, at levels of 3 and 5 grams daily, was terminated after 35 months, and the animals killed. No external symptoms of toxicity were observed and the level of copper in the blood, determined weekly, was not elevated significantly. Post mortem examination revealed no abnormalities. Analysis of the livers indicated a higher than average level of copper. Two calves were fed a cattle mineral mixture supplemented with copper sulphate at the rate of 2 grams per ounce of mixture, *ad libitum*, for 10 months. Consumption varied from 1 to 2 ounces per head daily. No symptoms of copper toxicity were observed and there was no increase in the level of serum copper. Appetite and growth were normal.

Guinea pigs fed a commercial diet supplemented with molybdenum showed a decrease in growth with 1,000 p.p.m. of molybdenum. At the 2,000 p.p.m. level, depigmentation of the hair occurred in black and brown coloured animals. Mortality was high at levels of 4,000 p.p.m. or greater.

Molybdenum toxicity, resulting in lack of growth in rats fed a commercial diet with added molybdenum, occurred at levels of 1,000 p.p.m. or higher. There was an increase in the molybdenum and copper contents of the livers of the rats on the molybdenum-supplemented diets. Rats fed a milk-sugar diet exhibited poor growth with 100 p.p.m. of added molybdenum, and mortality was high with greater levels.

Young rabbits fed a semi-purified milk and sugar diet containing 6 p.p.m. of copper showed a depression of growth and anaemia when 50 p.p.m. of molybdenum was added.

*In vivo* transfer studies showed that the placentae of rabbits and rats were extremely efficient barriers to the transfer of fluorine from the dam to foeti, only a very small amount being transferred. The alkaline phosphatase activities of plasma, kidney, liver, and intestinal mucosa were not suitable criteria of the degree of fluorosis in rats or rabbits. The alkaline phosphatase activity of rabbit bone was not influenced by the addition of fluorine to the diet.

Roentgenograms of the legs of rabbits did not reveal any demonstrable abnormalities, although gross exostoses of the long bones of rabbits fed high levels of fluorine were observed.

## POULTRY

### Breeding

An experiment arranged to determine the cause of undesirable black pigment in the abdomen of broiler chickens showed that the trait was due to the interaction of certain plumage color genes.

A testing program involving the egg production of popular pure strains and crosses between these strains has shown the superiority of the cross-strain chickens.



Certain white broiler strains, developed at the College, have been sent out for testing on breeders' premises.

In Bronze turkeys an advantage in number of poults produced per dam has been shown to exist for cross-strain female parents over pure strain female parents.

### Nutrition

A culture of *E. coli*, added at a level of 0.1 per cent to a chick diet devoid of vitamin K, proved to be a potent source of growth factors and vitamin K activity. It was effective in reducing the blood clotting time and severity of hemorrhages, and caused an increase in hematocrit values and growth.

Filtrates from a culture of penicillin tolerant *E. coli*, added to a practical diet, caused significant increases in growth and feed efficiency in chicks. The filtrate appeared to contain factors similar to growth factors found in dried fish solubles and liver fraction "L". Fish solubles, dried whey, and some fermentation products were found to improve the growth and feed efficiency of chicks and poults with a reasonable degree of consistency, when included in diets adequate in all known nutrients. However, in studies carried long enough to produce marketable broilers or turkeys, the cost of production was greater in the presence than in the absence of these unidentified factor sources.

The fermentation product, Vigofac, was found to be a source of both "fish factor" and "whey factor" activity for the chick. Inclusion of the product, in an "all-vegetable" laying diet, did not influence egg production, body weight, or egg shell quality, during a 16-week experimental period. It would appear that laying birds on litter do not require a supplementary source of "fish" or "whey factor."

Consistent improvement in growth and feed efficiency was obtained in repeated tests with chicks and poults, when wheat was included in diets containing corn as the sole cereal. This "wheat response" could not be explained in terms of "fish factor" or "whey factor" activity, nor by the presence of higher concentrations of zinc or copper in wheat than in corn. Further work showed that the wheat response was obtained only when all nutrients were kept constant from diet to diet, on the basis of figures for nutrient composition published in the scientific literature from the United States. Wheat-containing diets proved equal to "all-corn" diets when only protein was equalized. It was concluded that Canadian No. 5 wheat is equal in energy content to U.S. No. 2 corn, and that the published energy value of wheat is too low.

After four months of production, groups of hens have performed as satisfactorily on an "all-vegetable" basal diet containing 0.367 per cent total phosphorus, as when supplementary phosphorus was added. The requirement of laying hens for inorganic phosphorus would appear to be considerably lower than generally assumed. In addition, it does not appear possible to assay phosphate supplements for laying hens using a diet of natural ingredients.

Based on a chick assay, and using growth and feed efficiency as criteria, the phosphorus in soft phosphate (colloidal clay) was found to be 40 per cent as available as that in dicalcium phosphate. Soft phosphate, at the level permitted in Canadian broiler diets, could replace about two-thirds of the supplementary phosphorus needed in such diets. The requirement of broiler chickens for inorganic phosphorus was not greater than 0.32 per cent of the diet, a level considerably lower than the requirement of starting chicks recommended by the U.S. National Research Council.

The commercial enzyme preparation, Clarase 300, exerted no influence on the growth or feed efficiency of chicks fed diets in which the cereal portion was corn,

wheat, barley, or oats. The presence or absence of animal fat in the diets did not influence the response to the enzyme preparation. The results indicated that the barley available for feeding purposes in Ontario contains about 90 per cent as much energy as corn. This is considerably higher than the energy content of U.S. feed barley.

Acidulated soap stock was a comparable source of energy to animal tallow when used in broiler diets up to a level of about five per cent. At higher levels, the tallow proved superior. The results suggested the presence of a "toxic" factor in acidulated soap stock, which is present at a low enough concentration to permit the safe use of up to five per cent of this product in poultry feeds.

Turkeys reared on deep litter weighed significantly more and used feed considerably more efficiently than similar groups reared on slatted floors, when all birds received the same complete, pelleted feed. Porch-reared birds require more feed for maintenance than those reared on deep litter.

Turkeys fed a 35 per cent protein concentrate and grain, from eight through 24 weeks of age, weighed significantly less than groups fed a conventional 20 per cent protein mash and grain, free choice, or an all-mash ration. This was true whether the 35 per cent protein concentrate was fed free choice or limited, or whether the grain portion of the diet was coarsely ground or whole.

The restriction of feed intake for de-beaked turkeys proved unsatisfactory as the cut ends of the beaks became sore and the birds developed staphylococcic arthritis.

Feeding experiments with chicks showed that autoclaving raw Argentine rapeseed, at 15 pounds pressure for 10 minutes, greatly increased its nutritive value. When the period of autoclaving was increased to one hour or more, the improvement over the raw seed was less, but still substantial, provided supplemental lysine was added to replace that lost through destruction by the heat treatment.

The depression in the growth of chicks caused by feeding 500 p.p.m. of molybdenum, added to a practical diet, could not be overcome by the addition of 100 p.p.m. of copper. Some growth depression occurred with the feeding of 200 and 350 p.p.m. of molybdenum. This retardation could be partially overcome by the addition of 100, 200, and 350 p.p.m. of copper, but the addition of 500 p.p.m. increased the toxicity. Analyses of the blood of chickens fed combinations of molybdenum and copper at these high levels showed no changes in the values for haemoglobin and packed cell volumes. The addition of molybdenum up to a level of 4,000 p.p.m. to the diet of Black Australorp chicks did not change the pigmentation of the feathers. The increase in the molybdenum content of eggs from pullets raised on molybdenum supplemented diets was not altered appreciably by the inclusion of 100 p.p.m. of copper in the diet.

## WILDLIFE AND RANCH FUR BEARERS

### Parasitology

The release in a woodlot and subsequent live-trapping of two groups of laboratory-raised white-footed deer mice increased the numbers of cuterebrid (warble) larvae obtained for life history and physiology studies. The release of previously infested mice established that re-infestation may occur in the same season.

### Control

A light trap was designed and constructed to trap starlings at their roosts at night.

## Nutrition

Three types of fat (shortening, tallow, and partially hydrogenated marine fish oil) proved satisfactory as supplements to mink rations containing fresh water smelt as the major source of animal protein. Supplementation with these fats did not increase the low incidence of the "wet belly" condition.

## UTILIZATION OF PLANT AND ANIMAL PRODUCTS

### Dairy Products

Studies were undertaken to develop a satisfactory method of testing the milk in bulk tanks for sediment. No completely satisfactory method has been devised.

Investigations on the production of skim-milk powders have continued. The curd tension of the reconstituted powder can be used as a rough indication of the severity of heat treatment of the powder. Skim-milk powders with low curd tensions indicate a high heat treatment of the milk during drying. Milk from different breeds of cows reacted differently during drying. Jersey and Guernsey milks could withstand a more severe heat treatment and still produced a satisfactory cottage cheese. Hundreds of batches of cottage cheese were made from commercial and laboratory samples of skim-milk powder. They were analysed organoleptically and bacteriologically.

The use of various types of containers, under various conditions, for the storage of cream prior to testing was investigated. Cream samples which were stored at elevated temperatures in open top aluminum containers gave high butter fat tests. Containers with covers or screw top lids, when held under the same conditions, resulted in normal tests.

A study was made of the various types of cream sampling devices to determine their influence on the butter fat test. Stirring rods, McKay samplers, and dippers were used on composite samples of cream. The results indicated that the stirring rod method of sampling is inaccurate. Provincial regulations have been changed to comply with the results of this study.

The use of C.M.E. (a high protein wheat cereal), as a partial replacement for milk solids in ice cream, was investigated. The product did not prove satisfactory in the amounts studied.

The use of concentrated wheat gums as a stabilizer in ice cream was studied, but the results did not justify further consideration of the product.

Consumer preference studies were conducted to determine the effect of different types of emulsifiers in ice cream. The emulsifiers were whole egg, dried egg yolk, frozen egg yolk, mono and diglycerides, and polyoxyethylene derivatives of stearic acid. Preliminary results favored dried egg yolk.

The effect of thawing and refreezing of ice cream on the growth of *Staphylococcus aureus* was studied. Numbers of organisms did not increase as a result of thawing and refreezing.

Coal tar dyes which have been used for coloring butter and other spreads may be carcinogenic. Synthetic B-carotene has been used with satisfactory results. A loss of B-carotene occurred if it was added prior to pasteurization. No loss occurred if it was added, after pasteurization, to the cream or butter. The use of B-carotene increased the vitamin A value of a pound of butter by over 48,000 International Units.



B-carotene and lycopene may replace the annatto color previously used to color cheese. Under certain conditions, the bixin of the annatto becomes oxidized with resultant bleached color in Cheddar and processed cheese. A desirable color was obtained by blending proper of B-carotene and lycopene. Under some conditions the water dispersable carrier of the B-carotene imparted an undesirable flavour. The color of the cheese has stood up well in storage. The amount of B-carotene will increase the vitamin A value of the cheese by approximately 200,000 International Units per pound.

The use of various kinds of packages for cottage cheese has been evaluated from organoleptic and bacteriological standpoints. The cheese in some plastic containers had a phenolic taste. Some samples deteriorated in quality because of light transmission through the cartons, giving rise to an oxidized flavour. A metal-top, waxed carton seemed to give the best results.

Vats of pasteurized milk were inoculated with proteolytic cultures which had been isolated by growth and chromatographic studies. Over 100 vats of milk were made into cheese, and the cheese was studied organoleptically and bacteriologically.

Various cleaning and sanitizing compounds were used for bulk milk tanks on representative farms in the Guelph area. No significant correlation was found between iodophor type cleanser-sanitizers and the incidence of "off"-flavors in milk.

### Meat and Poultry Products

In a comparison of the meat yield of 4 strains of fowl, it was found that Leghorns yielded from 2 to 5 per cent less ready-to-cook weight than 3 dual purpose strains. However, the yield of edible cooked meat was only about 1 per cent lower.

In studies using antibiotics in the cooling systems of commercial poultry processing plants, it was found that aureomycin gave slightly better shelf-life extension than terramycin. Both antibiotics definitely extended shelf-life beyond that of untreated controls.

The dipping of broilers in water containing either terramycin or aureomycin for 20 minutes at 35°F extended the shelf-life of poultry processed under laboratory conditions, but the efficacy of both antibiotics was reduced greatly when applied to fowl processed under commercial conditions.

The feeding of high and low energy diets to pullets during rearing on range and in confinement gave no difference in egg quality. Eggs from the range reared birds had only a slightly higher Haugh unit value than eggs from the confinement reared hens. This finding differed from previous work in which the range reared birds produced eggs of significantly higher quality.

Results of studies using vinylidene copolymer bags for the storage of eggs indicated that this method has possibilities. In general, eggs stored in these bags scored higher in both odor and flavor than eggs stored with conventional oil processing.

Tests, using several types of containers for holding and collecting eggs for retention of original quality, indicated that collection and holding in covered pails for seven days resulted in a higher Haugh unit value than that of similar eggs held in wire baskets or on Keyes trays. However, the use of covered pails is not recommended because of excessive moisture collecting inside such pails with resultant mold growth on the shell of eggs so stored.

## Vegetable and Frozen Foods

Fifty-six varieties of hybrids of sweet corn were canned and frozen (cut and cob) to determine their relative quality for processing purposes. Data recorded included days to maturity, cutting per cent, total soluble solids at optimum variety, and organoleptic ratings following six months' storage.

Fifteen varieties of green beans, and 11 varieties of lima beans were canned and frozen for quality evaluation.

Raw, diced rutabaga was subjected to various treatments before being packaged and stored at both cool and room temperatures. At intervals, the quality of the raw and cooked product was evaluated organoleptically. Color changes were measured with a Hunter Color and Color-Difference Meter. Untreated, raw dices sealed in 1½ mil polyethylene bags and stored at 32° or 40°F retained good quality for 24 days. LSAT 300 and MSAT 400 cellophane and cellulose acetate also were satisfactory film for packaging. Perforating the bags with 1 to 4 one-quarter inch holes did not improve the quality of stored samples, and usually increased dessication. After 40 hours at room temperature, untreated samples in sealed bags developed peculiar odors and flavors; those in perforated bags became moldy. Samples in tin cans, sealed at either atmospheric pressure or 25 inch vacuum, developed peculiar odors and flavors in 1 day at room temperature, in 3 days at 40°F, and in 4 days at 32°F. None of the following treatments was effective in improving either the quality or storage life of the product: (a) vacuumizing at 25 inches for 5 minutes in tap water, distilled water, 1.5 per cent NaCl brine, 5 per cent brown sugar solution, and orange, grapefruit, orange and grapefruit, and lemon juices; (b) dipping for ½, 1, or 1½ minutes in solutions of 0.5 per cent sodium bisulphite, 0.5 per cent sodium bisulphite plus 0.5 per cent citric acid, 0.1 per cent NDGA plus 0.1 per cent citric acid plus 0.5 per cent ascorbic acid, 5 per cent salt, and two proprietary products, Spud-Nu and Turnip Blend; and (c) dipping for 3 minutes in 0.1 and 0.2 per cent propionic acid, 0.1 per cent sorbic acid, 0.3 per cent sodium diacetate, and 0.1 per cent sodium benzoate.

## Cereal Grains

Studies on handling and storage of high moisture corn were initiated. Nine hundred and forty bushels of shelled corn with a moisture content of 32 per cent were stored in a hermetic, fiberglass reinforced, plastic bin. After six weeks' storage quantities were removed daily for feeding and other purposes. Steers fed this corn have shown gains of about two pounds per day, although the grain is somewhat laxative. Bacteriological studies, using a modified Howard mold count method, did not show a significantly high mold count from the standpoint of spoilage. Some of the molds appeared to be capable of saccharification, which would indicate precursory effect in fermentation.

## OTHER FUNDAMENTAL STUDIES

### Analytical Procedures, Assays, and Measurements

A method for the spectrochemical analysis of plant ash solutions, involving the use of a direct current condensed arc excitation, has been developed. Quantitative investigations have revealed that calcium, magnesium, phosphorus, iron, manganese, copper, and boron in plant tissue may be determined with an accuracy of  $\pm 10$  per cent.

The co-operative study on the suggested changes in the quinalizarin method for boron have been completed and the modified method adopted by the A.O.A.C. as "first action."

The paper electrophoresis apparatus has been adapted for the separation of the proteinaceous constituents of royal jelly.

Progress has been made in the development of a method for measuring vapour pressure exerted by hygroscopic materials such as corn and wheat.

The application of a modified one-enzyme assay procedure for pantothenic acid in low potency grains has met with considerable success.

A satisfactory phasic and chromatographic separation of the saponifiable extract of corn, for cryptoxanthin and carotene assay, has been developed. Approximately half of the carotene in corn is destroyed when the sample is heated to 100°C for 48 hours, as compared to freeze drying; but cryptoxanthin does not seem to be affected by oven drying.

Experimental work on varying and measuring the relative humidity of air under continuous flow through a respiration train has continued. Five-gallon paint cans, fitted with a special rubber tube gasket, have proved useful both as humidifiers and respiration chambers.

### Enzyme Properties

Studies have been continued on the effect of anti-lactic dehydrogenase on leukemia. Antibodies specifically inhibiting the enzyme lactic dehydrogenase (L.D.) have been produced and purified, and the *in vitro* properties of this anti - L.D. have been studied in detail, preparatory to determining its effect on malignant cells.

The relationship between substrate concentration and the optimum pH for the alkaline phosphatases of plasma, bone, kidney, liver, and intestinal mucosa of rabbits has been studied. The phosphatases of the liver and kidneys possessed the highest pH optima with B-glycerophosphate recorded in these studies. Magnesium activation and the time course of reaction were studied. The pH optima have been established for substrate concentrations large enough to maintain zero order rate for the phosphatases of plasma, bone, and intestinal mucosa.

Studies have been continued with respect to factors affecting malic dehydrogenase activity of grasshopper muscle, and a study of the phosphagens present has been initiated. No trace of creatine phosphate has been found but arginine phosphate appears to be present.

### Amino Acid Studies

The use of radioactive amino acids indicated that the growth-initiating effect of amino acids on the washed cells of the species of root nodule bacteria, *Rhizobium meliloti*, might be related to the synthesis of a labile protein which is readily removed from the cells during the washing procedure.

Free amino acid levels in plasma of four-week old Barred Plymouth Rock cockerels receiving a lysine deficient diet, in contrast to a lysine adequate diet, were distinguished by a low level of lysine, a reduced level of arginine, and an elevated level of threonine and tryosine. Eight other amino acids showed only minor changes.

### Nutrition and Physiology of the Honeybee

A new system of rearing hybrid test queens for the Pelee Island Mating Station was inaugurated. Breeder queens from the U.S. Department of Agriculture, Bee Breeding Laboratory at Madison, Wisconsin, were held at Guelph and all the rearing done there by the double-grafting method. Virgin queens were culled, marked, and



shipped to Pelee Island for natural mating. This resulted in an increase in quality and uniformity of test queens.

Studies of secretion of nectar in *Streptosolon jamesonii* suggested that a native plant hormone in the flower influenced the quantity secreted.

Investigation of the chemical composition of royal jelly has centered on the acid components. German investigators have shown that the main acid,  $C_{10}H_{18}O_3$ , is w-hydroxydecene-2, 3, -oic. A second acid in this group has been isolated and characterized. Work has proceeded on the separation and characterization of the remaining acids.

Cartesian diver respirometric technique established that oxygen was utilized by royal jelly. This oxidative activity was not inhibited in an atmosphere of hydrogen cyanide, but was inhibited in nitrogen. The activity diminished rapidly with time, and ceased when held at room temperature for six to eight hours. Fresh royal jelly which had been stored at  $-18^{\circ}\text{C}$  showed no activity.

### Insect Microbiology

The mycetomal micro-organisms, found in the digestive tract of rice and granary weevils, are pleomorphic. Over 100 isolations of weevil tissues associated with these organisms have been made in a variety of media in drop cultures. Certain forms have been isolated and sub-cultured.

## DISEASE, INSECT, AND WEED CONTROL

### Diseases

A systematic collection of specimens of tomatoes with the disease known as "streak" and an analysis of the disease by temperature and nutritional effects suggested that more than one virus or strain of virus could serve as components of the complex, a finding which modified the approach in the study of this disease. The presence of a new "indicator strain" of tobacco mosaic virus has also been observed.

Chemical analyses of tomato plant leaves in the Aldershot area showed that calcium chelate spray increased their calcium content, but had no definite effect on the calcium content of the fruit. The treatment did decrease the incidence of blossom-end rot, but had no significant effect on the levels of trace elements in the plants.

Applications of calcium chelate, calcium chloride, and calcium nitrate to head lettuce plants indicated that neither foliage nor soil treatments had any effect on tipburn. The chelate as a foliage spray, at three rates of application, burned the leaves rather severely.

Ionic sulphur, a new fungicide-insecticide in liquid form, was ineffective against late blight in potatoes, but Dithane M22 controlled the disease reasonably well.

The initial study of the root-rot condition in canning peas centred around the fungus *Pythium ultimum*, but it was found that another disease, new to Ontario, was involved also. It was identified, after isolation and tests on differential host plants, as "near wilt," caused by *Fusarium oxysporum pisi* race 2. Related legume crops may act as carriers of the disease, although they themselves do not show symptoms of the disease. This is important in considering crop rotation on land in pea growing areas.

In seed treatment experiments with oats, it was established that a minimum of four days post-treatment storage was required for smut control. The chlorobenzene preparations used gave no control, but a thiram preparation gave control comparable to the mercurials. When applied at twice the recommended rate, one of the mercurials was injurious to the seed, but the other chemicals showed no harmful effects.

Field experiments with dwarf bunt of winter wheat showed that the heaviest infection occurred when: (1) the seed was planted shallow and the inoculum was applied to the surface of the soil, and (2) spores from the current year's crop increased the amount of infection more than those which had been collected one or two years previously. In laboratory experiments, chlorobenzene compounds prevented germination of dwarf bunt spores. Liquid mercurials suppressed germination but were not completely effective. The results of various experiments indicate that some degree of control would be achieved by: (1) crop rotation and early planting in well prepared soil, and (2) seed treatment with chlorobenzene fungicides.

Root and tissue extracts of scab-resistant and susceptible potato varieties were found to have little or no consistent effect on the growth of *S. scabies*. Attempts to isolate a specific actinophage suitable for typing purposes to differentiate between strains of *S. scabies* have revealed the presence in soils of a large number of highly active actinophages thought to be of significance in the study of actinomycete ecology. By means of a modified passive hemagglutination test it was possible to differentiate between certain strains of *Streptomyces*. The lysozyme technique of localizing sensitizing antigens for this test has revealed the presence of well-defined protoplasts in streptomycete mycelium. Genetic studies have shown that heterokaryon formation and genetic recombination exists between *S. scabies* strains, and are considered to be factors involving variation and the relationship between *S. scabies* and its environment.

An investigation into a new disease causing mortality in Ontario apiaries has resulted in the isolation of a bacterium which causes a fatal septicaemia in honeybees.

Bacteriological examinations have been conducted on healthy and diseased Ontario sport fish and the waters they inhabit. A suspected outbreak of furunculosis in trout has been confirmed by the isolation of the causal organism *Aeromonas salmonicida*.

### Insect and Pest Control

Repeated spraying with gamma benzene hexachloride (lindane) established that heavier granary weevils were more resistant. Weevils and their progeny exposed to constant sublethal amounts of the chemical, in their food and environment, became quite resistant, and some morphologically abnormal specimens developed.

Powder post beetles are widespread in farm buildings from Ottawa to Windsor and as far north as Manitoulin Island. Two species, *Ernobius mollis* and *Lyctus planicollis* were found emerging from the wood in new urban homes.

A survey indicated that the alfalfa weevil, now established in Pennsylvania, has not yet reached the Niagara Peninsula and Lake Erie counties.

Two sprays of heptachlor, aldrin, or dieldrin, at the rate of five pounds of actual toxicant per acre, reduced root maggot incidence in turnips to a level of from 14 to 25 per cent, while untreated checks showed 69 per cent infestation.

Of 200 newly synthesized organic compounds investigated for insecticidal effects on two species of aphids, and for phytocidal effects on broad bean plants,



ten showed distinct toxicity to insects and eight were markedly phytotoxic. One, a phosphorus compound, had dramatic immediate and residual toxicity to insects; one gave promise as a systemic, and one as a fumigant.

A micro-pipette method for the rapid screening of potential insecticides was simplified and improved.

European skipper larvae caused severe damage in unimproved pastures in the southern townships of Grey County. Injury by this insect has not been reported previously.

The severe injury previously reported as resulting from the treatment of *Canaerti* juniper and other varieties of *Juniperus virginiana* with either 25 per cent wettable powder or 50 per cent emulsifiable concentrate of malathion was not observed when the plot was watered heavily the day following the application. Only slight discoloration of *Canaerti* juniper resulted.

### Weeds

A study of penetration and persistence in soil of erbon [baron: 2-(2, 4 5-trichlorophenoxy) ethyl -2,2- dichloropropionate] applied to fallow soil, classified as Burford loam, at rates ranging from 20 to 160 pounds per acre in June, 1956, was completed. A year later no erbon was present in any of the plots, at any of the sampling depths. Fall wheat sown along one side of one series of plots in September, 1956, as an indicator crop showed 100 per cent survival in the spring, on the 20 pounds per acre plots, 65 per cent on the 60 pounds per acre plots, and only 7 per cent on the 120 and 160 pounds per acre plots. Oats sown as an indicator crop, in the spring of 1957, developed equally well on all plots.

The sodium salt of 2, 2-dichloropropionic acid (Dowpon) was applied as a herbicide to native vegetation beneath apple and pear trees, for the third consecutive year, and its effectiveness compared with that of amino-triazole. At a concentration of 8 pounds in 100 gallons of water, Dowpon killed the grasses and stopped weed growth. The action was slower than with a concentration of 15 pounds per 100 gallons. Dowpon and amino-triazole at the same rates appear to be about equally effective.

A two-year study of the use of Simazine as a pre-emergent weed control in corn production has indicated that this chemical gives outstanding weed control.

A second trial of Chloro I.P.C., as a pre- and post-emergence treatment for weed control in onions, verified that this chemical is injurious to vegetables in both cases. Laboratory experiments indicated that the damage might be the result of temperature conditions.

Herbisan and Randox (CDA) gave good weed control when used in either pre- or post-emergence treatments.

A study of the competitive effects of the weeds, lamb's quarters and annual grasses, within rows of hybrid corn, showed that yield losses averaged about 30 per cent with a mature weed population of three lamb's quarters per foot of row, or a dense stand of grasses. When such weeds were removed ten days prior to tasselling of the corn, no yield losses occurred.

Research in the physiology of the resistance of strains of wild carrot to 2,4-D has shown that this resistance was not due to differences in respiration rate in treated or untreated seeds, seedlings, root slices, and leaf sections.



## ECONOMICS OF FARMING

### Farm Management

The farm management and accounting project included a summary of 323 farm records, representing 32 counties. Labor incomes in 1956 were appreciably higher than in 1955, the average of the group being \$862. higher. The gains were fairly uniform for all types of farming enterprises, with the exception of beef-hog farms, which showed, on the average, a gain of \$1,525. In 1955, this group experienced a labor income of minus \$798., but recovered to a plus \$727. income in 1956 for the 146 farms included.

### Fertilizer Practices

A demonstration project was conducted on two farms in Northumberland County to determine the economics of certain recommended fertilizer practices on canning tomatoes, particularly the foliar application of fertilizer. The control fertilization practice was 500 pounds of dry fertilizer. Additional fertilizer was applied in foliar and in dry form. There was no response in quality or yield to either treatment.

Two types of production functions were completed for each of four potato fertilization tests. Positive responses to each of the three basic nutrients (N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O) were observed within the ranges of application included in the experiment. No appreciable indication of interaction response among these nutrients has been found.

### Conservation

An analysis was made of 33 account records kept by farmers who had started to operate on a soil conservation plan in 1955 or 1956. The analysis showed that these farms average 180 total acres, 91 crop acres, 46 animal units, 470 total work units, 308 work units per man, and \$32,240. total investment. Total receipts averaged \$10,715., total expenses \$10,040., and labor incomes averaged minus \$267. The average of these farms was appreciably below the average of all farm account co-operators.

### Cost Studies

An egg cost study of 55 flocks showed costs varying from 34 to 49 cents per dozen, depending on the type of poultry kept. Approximately half the cost was attributed directly to feed.

Broiler feed-gain functions have been calculated for two strains of birds. The following functions were derived:

(a) for mixed sexes, New Hampshire x Columbian Plymouth Rock

$$Y = 0.1585 + 0.4354 X - 0.0088 X^2$$

(b) for mixed sexes, Barred Plymouth Rock

$$Y = 0.1671 + 0.5258 X - 0.0162 X^2$$

where Y is the weight of the broiler, and X is the quantity of feed fed.

Optimum market weights were calculated for various feed-broiler price ratios.

### Marketing and Merchandising

Approximately 120 retail stores were surveyed in four areas of Ontario: (1) Belleville-Kingston, (2) Barrie-Orillia, (3) downtown Toronto, and (4) suburban

Toronto, with regard to fresh peach retail merchandising practices. A very wide variation in the price of peaches occurred from day to day, from store to store, and from area to area. The lowest retail price of fresh peaches was in large supermarkets; the highest was in fruit stores. The retail price declined about half a cent per six-quart basket per day over the peach season in all stores. The trade objected to some packing practices, particularly the exclusion of paper cups from the bottom layer of the two-layer pack, and there were frequent complaints about the lower quality of fruit in the bottom layer.

A study of the average seasonal pattern of prices and marketings for choice, good, medium, and common steers, good cows, veal calves, and hogs has been made for the period 1946 to 1957. The normal price pattern of good and choice steers indicates that prices for these grades range from approximately 4 per cent above average in July and August, to 4 per cent below average in February and March. Medium and common steer prices reach a seasonal peak of 6 to 7 per cent above average in June and July, and a seasonal low in October and November of 4 per cent below average for medium and 7 per cent for common. Hog prices were normally 4 to 5 per cent above average during June, July, and August, and 4 to 5 per cent below average during October, November, December, and May. Hog marketings varied from approximately 10 per cent above average in May, 15 per cent above average in November and December to 10 per cent below average in February, and 24 per cent below average in August.

A study of the operations of the Ontario Cheese Producers' Marketing Board indicated that its price discrimination policy, in several recent years, has resulted in higher returns to the cheese producer. The domestic demand for Canadian cheddar cheese is more inelastic than is the export demand. One condition necessary to the long-run success of a two-price system is a monopoly position on the home market; the lack of such a condition is shown by the increase in cheese production in Quebec from  $1/5$  to  $1/4$  to  $1/3$  of Canadian production in 1955, 1956, and 1957, respectively.

A project compared the profitability of different systems of handling a beef cattle enterprise in Eastern Ontario, the Bruce Peninsula, and Central Ontario, and the County of Kent in Southwestern Ontario. The systems compared were baby beef, pasture finishing steers, stable-fed calves, and baby beef and pasture finishing steers combined. Pasture finishing steers was the most profitable system in Central Ontario and Kent County, whereas baby beef and pasture finishing steers proved most profitable in Eastern Ontario.

One hundred and sixteen replies were received from a mail questionnaire sent to Canadian agricultural co-operatives. Fifty-three per cent of the respondents stated that the major problem facing their co-operative, at the present time, was retaining members' interest and patronage; 55 per cent cited financial problems such as member equity, working capital, and accounts receivable; 45 per cent cited both membership and financial problems. As obstacles to their progress, 60 per cent mentioned member interest and/or lack of membership education; 47 per cent cited difficulties in obtaining the necessary financing; 44 per cent mentioned competition and limited potential as factors limiting their progress.

## EXTENSION AND SERVICES

While teaching and research are the major activities of the College, most members of the faculty take some part in the varied and extensive services carried out regularly for the agriculturalists and agricultural industries of the Province; some members are engaged chiefly or wholly in extension work. This work includes



giving information and advice to the thousands of individuals who make enquiry by personal visit, by telephone, or by letter. Most of these enquiries come from Ontario, but some come from other provinces and other countries. The enquiries deal with a multiplicity of questions ranging all the way from how to propose a toast to the planning of a new barn or the purchase of a farm. The majority, however, are requests for information which must come from the College laboratories. Some 25,000 analyses and tests of soils, dairy products, well water, etc., were made during the year.

Valuable as this work is, perhaps even more valuable is the series of short courses, conferences, and meetings arranged by the various departments. These bring to the College not only horticulturists and dairy men, live stock producers and seed processors, but also bankers and clergymen who are interested in the problems of farm life. The total attendance at these courses runs into the thousands.

In addition, members of the staff have spoken at many scores of public and scientific meetings, have taken part in numerous radio and TV programs, have judged at many fairs and shows, have conducted demonstrations and field days, and have assisted in other activities of farm groups. They have visited thousands of farms to deal with individual problems in crops, live stock, soils, etc.; they have also paid regular visits to many horticulturists and greenhouses.

Members of the staff have prepared bulletins and circulars and numerous articles for the farm press and other journals. They have been responsible also for a regular service of news releases and photographs which have been sent to the daily papers and other appropriate outlets.

Assistance given to the Soil and Crop Improvement Association projects included the threshing of thousands of samples and the computation of yields. Foundation Stock seed of 21 varieties of field crops is maintained annually; 14 of these were developed at O.A.C. Lactic cultures, and pullorum antigen have been produced and distributed on an extensive scale. Up-to-date information has been provided for the Spray Calendar and the Weed Control Circulars; aid has been given in the warble fly control program, and help provided in dealing with the problems occasioned by plant diseases, weeds, and injurious insects.

Special mention should be made of the extensive work being done in Poultry Flock Approval, in Apiary Inspection and Disease Control, in the Farm Building Plan Service, and in Farm Management Associations.

1. The Poultry and Turkey Approval Policies are administered by the Department of Poultry Husbandry; the Department of Bacteriology supervises the pullorum testing. The total number of chickens tested was 1,335,314 in 2,438 flocks, compared with 1,411,720 in 2,729 flocks the previous year. The reaction on the first test was 0.03 per cent compared with 0.07 per cent in 1956-57. The majority were tested by the rapid whole blood method. The total number of turkeys tested was 67,696 in 88 flocks, compared with 57,821 in 113 flocks the previous year. The reaction in the first test was the same for both years, 0.01 per cent. All turkey blood samples are tested by the tube method.

2. Apiary registration in Ontario in 1957 totalled 135,516 colonies operated by 3,145 beekeepers. Apiary inspection was carried out in 3,339 apiaries, totalling 48,391 colonies. American Foulbrood was found and destroyed in 2.0 per cent of these colonies. Approximately 48 disease samples were diagnosed in the laboratory.

3. For the Canadian Farm Building Plan Service the catalogue and working drawings of the poultry section have been completed. The pre-production catalogue



and many of the working drawings of the special structures and equipment section are also ready for distribution. Some 400 sets of blue-prints for poultry buildings have been distributed.

4. The Department of Agricultural Economics provided farm management training in 22 three-day schools and nine night schools. It assisted 30 Farm Management Associations of which 17 sent in records for summary and analysis. A short course for managers of banks and other farm credit institutions was held at the College, and six regional finance conferences were promoted throughout the Province for farm lenders. In co-operation with the C.B.C., a study was made in 14 Farm Forums of the relative effects of TV and radio in stimulating group discussion; it was found that TV encouraged the normally shy person to speak, thus producing a better balanced discussion with more general participation.

The Department of Public Relations performed the function of an extension service unit and visual aid centre for the Ontario Department of Agriculture as well as for the College. During the year it produced thousands of photographic prints and slides, hundreds of feet of 16 mm film and microfilm, and several motion pictures, some with sound. It also organized and conducted courses in photography and projectionist training, in the use of exhibits, and in layout and design for the Associate Diploma Course, the Short Courses, and the faculty of both the Ontario Agricultural College and the Ontario Veterinary College. It printed and distributed many thousand copies of numerous circulars and prepared extensive exhibits for a variety of fairs. It organized the annual Winter Short Course, attended by over 400 students, and arranged programs and accommodation for the many groups visiting the College, in all some 42,000 people.

## *Macdonald Institute*

Registration took place September 18, 1957, with 40 students enrolled in the Diploma Course and 158 in the Degree Course, making a total of 198. In addition, one special student attended courses in two subjects. For the first time since the inauguration of the Degree Course, some third year students had to live out of residence. Next year it is expected that a third option, Home Management, will be offered in the fourth year.

### Changes in Personnel

The resignations of Dr. M. I. Irwin, (McGill), Miss Jane Karstedt, B.A., M.A., and Miss Patricia Lyon, B.Sc. (H.Ec.) (McGill), and the need for an increased staff led to several new appointments: Miss Dorothy Pearson, B.A., M.A., nutrition and foods; Miss Jeanne M. Holman, B.A. (Western), foods; Miss Martha R. Rider, B.Sc. (H.Ec.) (McGill), nutrition, foods, and diet therapy; Miss Lois Etherington, B.F.A. (Kansas), M.F.A. (Cranbrook A.), applied arts; Miss Lila E. Enberg, B.Sc. (H.Ec.) (Alberta), clothing, textiles, and design; Mrs. June C. Ford, B.H.Sc., later replaced by Mrs. Joan Tanner, B.H.Sc., clothing and foods.

### Extension and Research

Members of the faculty, in addition to their teaching and research work, have answered approximately 170 requests for information and planning in the fields of food and nutrition, home planning and management, textiles and clothing. The staff members have spoken to over 4,000 people in 65 talks, have had 47 articles written, and have conducted several TV programs.

Through the special activity of the new staff member in Applied Arts, there have been some outstanding exhibitions, both by students and Canadian craftsmen, in metal, in ceramics, in weaving, and also in the Fine Arts field.

Miss Olive Wallace was involved in the detailed planning and the production of equipment specifications for the kitchen and dining area in the new Physical Education Centre.

Faculty members have been much in demand for committee and advisory work with students and with professional organizations such as the Canadian Dietetic Association, the Canadian Home Economics Association, and others.

For the second time an Obesity Clinic was run as a project for senior students. In this same department experimental food studies on meats and cheese were conducted in co-operation with the O.A.C. departments concerned. In the Textiles Department, studies were continued on the effect of ultra violet light on the strength of curtain materials. In addition, studies were begun on the effect of size of thread and the stitch length on strength of seams. The material from the Mental Measurements Tests given to first year students continues to be collected and evaluated by the Dean of Women.

## *Ontario Veterinary College*

The past fiscal year was one of expanding activity for the College. This included an increased enrolment of students, the establishment of the Department of Research, studies carried out on the curriculum, an expansion of the program of graduate training, the development of increased clinical facilities to accommodate a larger "in-clinic," and wider activities in veterinary extension work.

It is the desire to increase the number of veterinary surgeons available to the livestock industry in Canada; and it is encouraging that more qualified applicants from the various provinces are seeking admission to the College. For many years foreign students have been accepted as well as all properly qualified Canadian applicants. In 1957-58 a total of 276 students registered in the course in veterinary medicine; of these 123 came from Ontario, 90 from the other nine provinces, and the remaining 63 from other countries. With a quota of 60 students for each year of the five-year course, the College had an enrolment that was short by 24 students. There were 87 places that could have been filled by Canadian students. However, the prospects for the 1958-59 session are such that we may reach our quota without accepting non-Canadian students.

### ADMINISTRATION

#### Personnel

On March 31, 1958, the faculty of the College consisted of 50 permanent, 10 temporary, and 2 part-time members; and the staff (office, housekeeping, and infirmary) of 95 permanent, 23 temporary, and 30 casual members.

#### Appointed

D. C. Blood, B.V.Sc., and K. V. Jubb, B.V.Sc., M.S., Ph.D., both from the University of Sydney, to the Departments of Medicine and Surgery, and Pathology and Bacteriology, respectively, and A. R. Graham, M.Sc., Ph.D., from the Memorial University of Newfoundland, to the Department of Physiology; as Associate Professors. C. M. Fraser, B.S.A., D.V.M., from general practice in Manitoba, to the Department of Medicine and Surgery, and G. A. Robinson, B.Sc., M.Sc., Ph.D., from the University of Western Ontario, to the Department of Research; as Assistant Professors. L. M. Cobb, B.V.Sc., M.R.C.V.S., from the University of Bristol, to the Department of Medicine and Surgery, and T. J. Pridham, D.V.M., to the Department of Pathology and Bacteriology; as Lecturers. V. Zavitz, D.V.M., to the Department of Anatomy, and T. J. L. Alexander, B.Sc., M.R.C.V.S., from the University of London, and B. Sorrell, D.V.M., to the Department of Medicine and Surgery; as Graduate Assistants. A. M. Luft, B.A., M.Sc., from the University of Western Ontario, to the Department of Research; as Assistant.

#### Resigned

J. Belcher, D.V.M., M.S., and D. L. Dungworth, B.V.Sc., M.R.C.V.S., from the Department of Pathology and Bacteriology; D. H. G. Irwin, B.V.Sc., from the Department of Anatomy; and J. H. Reed, D.V.M., and G. Sapegin, Dipl. Vet. Med., from the Department of Medicine and Surgery.

### DEGREES, HONOURS, AND NEW AWARDS

The degree Master of Veterinary Science was received by A. J. Cawley, D.V.M., B. F. Kingscote, D.V.M., and S. D. Vesselinovitch, Dipl. Vet. Med., and the degree



Master of Science in Agriculture by D. C. Maplesden, D.V.M., F. H. S. Newbould, B.S.A., and B. J. McSherry, D.V.M.; from the University of Toronto.

### Publications, Addresses, and Other Activities

Forty-five articles — fifteen from the Department of Medicine and Surgery, nine from the Department of Pathology and Bacteriology, eight from the Department of Research, four from the Department of Parasitology, three each from the Departments of Anatomy and Biology, and three Extension Releases from the Extension Group — were published during the year. A weekly "Animal-Health News Release" service was begun in October.

Members of the faculty participated in professional meetings throughout the year, notably the annual meeting of the Canadian Veterinary Medical Association in Vancouver from the 22nd to the 24th of July, and of the American Veterinary Medical Association in Cleveland from the 19th to the 23rd of August.

Among the distinguished visitors to the College were Brigadier-General Wayne O. Kester, President of the American Veterinary Medical Association; Dr. Louis C. Heemstra and Dr. Benjamin Schwartz, who visited the College as members of the Veterinary Education Committee of the Agricultural Research Service, United States Department of Agriculture; and Dr. R. F. Montgomerie of the Wellcome Research Laboratories, England.

Tours of the College were made by students from the Camp Borden Medical Training Centre, the Ontario Teachers' College, and the final year of the pharmacy course at the University of Toronto; and by representatives of the 4H Clubs, the Ontario Fur Breeders' Association, the Women's Institutes of Ontario, the High School Open House, and a number of farm groups. Some of the groups also toured the regional laboratories.

## COLLEGE FUNCTIONS

### The Annual Convocation and Baccalaureate Service

Forty-five students received the degree of Doctor of Veterinary Medicine at the Annual Convocation, which was held on May 17th, 1957. After the ceremony, Charles A. Mitchell, B.V.Sc., D.M.V., F.R.S.C., President of the Canadian Veterinary Medical Association, addressed the students.

The Baccalaureate Service for the 1957 graduating class was held on March 30th, 1958; the sermon was given by the Rev. Kingsley Joblin, Professor of Religious Knowledge and Chaplain of Victoria College, University of Toronto.

The Student Chapter, A.V.M.A., held its annual banquet on February 20th; Dr. W. W. Armistead, President of the American Veterinary Medical Association and Dean of the College of Veterinary Medicine at Michigan State University, entertained as well as interested the faculty and students with his after-dinner speech on ethics in the profession. The students held an "At Home" at the College on the same evening, and more than a thousand visitors saw colorful displays in the various departments.

## ALUMNI ASSOCIATION

The Eighth Annual Meeting of the Alumni Association was held at the Royal York Hotel in Toronto on January 20th. Action was taken to empower the Alumni Association officers to establish an Ontario Veterinary College Centennial Fund, which will come to fruition at the Centennial Celebration in 1962.

## *Horticultural Experiment Station*

An event of interest — the laying of the cornerstone of the new Administration and Laboratory Building — took place on the afternoon of July 30, 1957. The Minister of Agriculture, for Ontario The Hon. W. A. Goodfellow, officiated in the ceremony, assisted by the Hon. William Griesinger, Minister of Public Works. Growers, shippers, allied industries, and municipal councils were represented on this occasion. Seasonal fruits resulting from the Station's breeding program were on display and available for sampling. On January 13, 1958, the Staff moved into the new building, and work was commenced to renovate the old building for the use of Extension Services personnel who are now occupying Dr. Palmer's former residence situated between the old and new Administration Buildings.

### **Training Methods for the French Hybrid Grapes**

The recent fruit census has shown a sizable planting of some of the French hybrid grapes. Since these grapes have different growing and fruiting habits from those of the common varieties Concord and Niagara, various pruning and thinning methods have been tried.

During a seven-year period, Seibel 9110 has been given four treatments as follows:

TREATMENT 1. Pruned to half the number of buds recommended for Concord and then bunch-thinned before blossoming to one bunch per shoot.

TREATMENT 2. Same pruning as 1 with no bunch thinning.

TREATMENT 3. Pruned to same number of buds as for Concord and bunch-thinned as for 1.

TREATMENT 4. Same pruning as 3 with no bunch thinning.

The average yield for the four treatments was 17, 18, 22, and 21 pounds per vine respectively.

Where no bunch thinning was practised, the vine was weakened, as shown by the weight of brush removed, which was 2.5, 1.8, 2.2, and 1.5 pounds per vine respectively for the four treatments.

The heaviest yield was from the vines receiving similar pruning to that for Concord but having over half the bunches removed at thinning time.

### **Co-operative Field Experiments in Fruit Nutrition**

To advise growers on soil management and fertilizer practice, it is necessary to have results of field experimental work for each major crop and also for major soil and geographic areas, which may differ in their nutrient-supplying powers for the type of crop grown. However, the major part of the Station land is required for variety testing and breeding work, which cannot be carried out on private property, and, if an orchard or vineyard is planted for use in a nutrition experiment, there is a considerable time-lapse before results can be obtained.

With this in mind, the work in the field of fruit nutrition is being increasingly directed to co-operative field experimental plots in grower orchards and vineyards. By this means the Station's staff can go into bearing orchards or vineyards with the

co-operation of the owner and in a relatively short time measure the effects of its treatments. At the present time there are co-operative fertilizer and soil-management experiments in six grower vineyards in the Niagara Peninsula. These vineyards are representative of the major soil types on which this crop is grown. Co-operative grower experiments with apples have also been established. In one Halton County orchard, various rates of fertilizer application and types of management are being studied in a young apple orchard on the dwarfing Malling IX rootstock. The increasing acreage of this type of apple culture in Ontario brings a need for work of this nature. In standard apple orchards there are now five co-operative grower experiments underway — three in Norfolk county and two in the Georgian Bay area — which are of demonstrational nature and are being carried on in co-operation with the local Fruit and Vegetable Extension Specialists.

In all the apple orchards under test, not only is total yield being obtained, but also the effect of soil management on fruit quality. The study of quality is becoming increasingly important as controlled — atmosphere storages become relatively more important.

### Survey of Growers' Packs of Grapes

A study to determine the requirements for a quality pack of grapes for shipping was started in the autumn of 1957 in co-operation with farm products inspection service. Samples (127) were selected at random from shipping platforms and taken to the Experiment Station. Two six-quart baskets constituted a sample. One basket was studied the day following arrival and the other was kept at room temperature three more days to determine holding quality.

As expected, there was great variation in number of bunches per pack. It was observed, however, that regardless of bunch size, the pack should be neither so tight that the berries are crushed nor so loose that considerable shelling results.

With regard to varieties, the apparent order of decreasing shelling was Ontario, Fredonia, Champion, Portland, Van Buren, Concord, Niagara, and Seneca, and that of decreasing splitting was Concord, Portland, Niagara, Van Buren, Fredonia, Ontario, Seneca, and Champion. The survey strikingly showed that the more carefully packed baskets almost always had a low incidence of shelling and splitting.

Decay was fairly low at shipping time, but seemed to increase at room temperature, especially with the variety Niagara. There was no increase in splitting in the basket when it was held at room temperature for three days. Shelling in the basket during transit would seem to be a problem with Concord but not with Fredonia. The other varieties behaved irregularly.

The best net-weight range for a basket of grapes, exclusive of Van Buren, which was somewhat lighter, seemed to be from 7 pounds 5 ounces to 7 pounds 11 ounces. It is influenced by variety differences, berry size, and packing skill.

Finally, this study clearly showed that, apart from Seneca, Niagara, and Ontario, the average percentage of soluble solids, as indicated by the refractometer, should be at least 14 for best dessert quality, perhaps 13 for the above three varieties.

### New Asparagus Variety Trial Planting

The asparagus variety Viking was formally introduced in 1950, though some fields had been planted prior to that time as V35. This variety is now the most widely planted one in Ontario, and almost all replacement planting is to Viking. At the time of introduction, Viking was unquestionably the highest yielding and best quality



asparagus variety for this area. Since then, several new varieties have been introduced, and in some other trials they have outyielded Viking. A new planting for variety comparisons was made at the Horticultural Experiment Station in 1957. Four numbered California lines and the varieties Raritan (New Jersey), Seneca Washington (New York), and Waltham Washington (Massachusetts) are being compared with Viking. In the spring of 1958, differences are apparent in earliness of emergence and in spear-size. Harvesting and yield records will begin in 1959. Within about five years fairly definite information on these varieties will have been obtained. It is expected that annual reports will be made available giving yield and ratings for the particular year and also cumulative yields.

### Peach Breeding

Peach breeding was begun at the Horticultural Experiment Station in 1911. Since that time 11 varieties have been named and introduced. Five of them — Vedette, Valiant, Veteran, Erlyvee and Somervee — have been widely planted in British Columbia. Veteran is one of the most hardy varieties in bud and one of the most dependable bearers.

From later breeding, 55 selections are in Station orchards under second test. Several of them are being tested in grower orchards. Selection 46071 (39058 x Veteran) is receiving widest trial and, if it proves superior to Sunhaven, a new variety from Michigan of the same season, it may be named.

Selections receiving high canning ratings in 1957 were 461013 (39058 x Vesper), 46042 (Early Halehaven x Envoy), 46076 (39058 x Veteran), and 46095 (39058 x Envoy). These selections will be given more extensive trial.

There is a need for good varieties in the season between that of Veteran and Elberta. Since 1952, crosses have been made with emphasis on this season. From the 1952 and 1953 seedlings, 140 fruited for the first time in 1957. Sixty-five of them have already been discarded, and the remainder will be evaluated for another year at least. An additional 1,350 seedlings are planted in the orchard and should fruit in the next few years.

### Breeding for Resistance to Blotchy Ripening in Greenhouse Tomatoes

Blotchy ripening is a non-parasitic disease of tomatoes. Areas of the outer wall of affected fruits remain green or yellowish when the rest of the fruit is red-ripe. Blotchy ripening is present in some greenhouses every year and during some years is a very serious problem for all tomato growers. Under the Farm Products Grades and Sales Act, no blotchy ripening is allowed in either Select or No. 1 grade, and only one small blotch is allowed on a No. 2 fruit. In the spring of 1955 many growers lost from 10 to 60 per cent of their crop during the main production period.

Although no immune variety is known, there is considerable varietal difference in susceptibility. Ohio R7, a pink-fruited variety of the Globe type, is probably the best source of resistance. Unfortunately, this type is not adapted to Ontario conditions, and most markets want a red tomato.

The Horticultural Experiment Station at Vineland has obtained from the Ohio Agricultural Experiment Station red-fruited breeding lines possessing a high degree of resistance and is testing them for adaptation to Ontario conditions. The variety Ohio R7 has been crossed with adapted varieties such as Tuckqueen, Vinequeen, and Vulcan. Segregating populations are being grown under cultural conditions which favour a high incidence of blotchy ripening. These conditions include close planting

distance ( $2\frac{1}{2}$  square feet per plant), high nitrogen and low potassium nutrition, virus infection, and radical changes in growing temperatures.

#### Horticultural Wastes (Products Laboratory)

Considerable tonnages of fruit and vegetable materials become waste each year, consisting, in part, of culls, trimmings, and seeds and skins from factory operations. Some of the wastes present a disposal problem, and in every case an economic use would be desirable.

Such wastes tend to be scattered widely and thus present a collection problem. Many of them have a high water-content. It seems necessary to discover in them a relatively valuable ingredient if waste utilization is to be economically possible. With that in mind, a survey was made of locally grown fruits and vegetables to discover if they contain "growth factors" which might be of special value in the propagation of micro-organisms.

Growth factors were found to be present but not in sufficient quantity to compete economically with non-horticultural materials now in commercial use.

#### Short Term Storage (Products Laboratory)

There are some storage problems with fruits and vegetables which can be met adequately by structures and equipment which are less elaborate and less costly than is needed for *maximum* storage effect. The usual storage requirement for peach is the most impressive example in this area of a product which ordinarily does not need maximum storage. Moreover a very large storage space is still needed to control this crop after harvest, and at the moment there is little, if any, need for the space except in peach season. Sometimes a grower has need on his property for short holding of berries or greens. Again he does not require, and would not use, the potentialities of a maximum-effect storage.

Studies are being made of simplified structures and equipment for less-than-maximum storage needs. A storage of this type was built and tested, and is being altered as needed for new tests.

## *Kemptville Agricultural School*

The teaching of Agriculture and Home Economics along with extension work continued to be the main functions of the Kemptville Agricultural School throughout the past year. Enrolment in the four courses offered at the School was satisfactory, with a considerable increase in the junior year in agriculture. Enrolment was as follows:

Agriculture — two-year course: Juniors .....	45
Seniors .....	28
Advanced Course in Agricultural Mechanics .....	10
Home Economics: One-Year Homemaker course .....	5
Two-Year Home Economics course .....	9
Dairy Course .....	10

The majority of K.A.S. graduates in agriculture return to their home farm or, if the farm set-up at home is not conducive to their getting into the business, secure employment in some phase of agriculture. Courses offered are adjusted periodically to conform with changes in agriculture. There is a definite trend towards greater specialization and larger farm units, with more emphasis on the farm as a business.

The facilities at the K.A.S. have been used by many farm organizations during the year for meetings, field days, etc. The reports which follow of the several divisions give briefly the extent of extension work performed by each, usually in co-operation with the Agricultural Representative Service.

A new poultry building was started during the year and will be finished for the 1958-59 school year.

The Civil Service of Canada for the fourth year used the facilities of the residence and class rooms in the mechanics building for a four-week officers' course from August 19th to September 13th.

Several additional scholarships and bursaries have been established at the Kemptville Agricultural School to assist students in financing their attendance in the various courses. The School is very grateful to the thirty-five friends and organizations who have made these contributions, which are appreciated so much by the recipients.

### AGRICULTURAL MECHANICS DIVISION

During the year the work of this division consisted of lecturing on agricultural engineering subjects to the students in the junior and senior years in agriculture and the advanced course in agricultural mechanics during the school term, and conducting field work and agricultural engineering extension throughout the year.

The following subjects were taught during the school term: drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, use of explosives, tinsmithing, metallurgy, forging, welding, plumbing, farm machinery, motor mechanics, woodworking, farm buildings, rope work, care and sharpening of tools, and the care and operation of earth-moving machinery.



The students of the advanced course were taken on a number of field trips as a supplement to class room instruction.

This division is indebted to the following companies for placing machinery, on consignment, at the K.A.S. for use in class room instruction and for demonstrations: Massey-Harris-Ferguson Company, Limited; International Harvester Company, Limited; Cockshutt Plow Company, Limited; Allis-Chalmers Company, Limited; J. I. Case Company, Limited; Goodison Industries Limited; Beatty Bros.; Niagara Brand Spray Company; London Concrete Machinery Company, Limited; Sass Manufacturing Company; F. E. Meyers Company, Limited; De Laval Company, Limited; and the Ketchum Manufacturing Company.

### Extension and Field Work

The extension and field work conducted by this division consisted chiefly of drainage service, building service, 4-H Tractor Club supervision, agricultural night classes, and farm meetings.

Under the drainage service, 440 farmers were called on and received assistance and advice on drainage problems. Blueprints for 134,000 feet of profile and systematic drainage plans for 3,192 acres of land were prepared for farmers of Eastern Ontario. Twenty-four drainage installations were inspected. During the year this division co-operated with agricultural representatives in planning and conducting 32 drainage field days.

Under the building service, 285 farmers were visited and given assistance and advice on ventilation of stables, construction of new, or remodelling of, farm buildings. Eighty-four building plans were prepared and distributed. Forty-nine extensive building or remodelling jobs were completed, and 59 advisory calls on ventilation problems were made.

The engineering extension work of this division also included the following services: surveying for, and advice on, the layout and installation of septic and sewage disposal systems; advice on the installation of water systems; advice on the layout, construction and equipping of bathrooms; planning and checking of electric wiring installations; and advice on the adjustments and repairs to farm machinery. Forms for the construction of septic tanks are loaned from either the office of the county agricultural representative or this division.

Two staff members of this division acted as instructors and supervised 15 4-H tractor clubs which had a total membership of 177 members. They attended club meetings, conducted 15 achievement days, conducted coaching classes, and visited the majority of the members at their homes.

During the winter months this division co-operated with the Extension Branch of the Ontario Department of Agriculture in supplying instructors for 7 night classes conducted at Sydenham, Tweed, Eganville, Russell, Athens, Milford, and Johnstown, on gas welding, electricity, and farm power. These classes were held one night a week for twelve weeks. The attendance ranged from 10 to 15 in each class. At Athens there were two classes in welding on the same night; one class started at 6:30 p.m. and the second started at 8:30 p.m.

During the year speakers were supplied for a number of farm meetings, which included breed association barn meetings, county spray schools, council meetings, and ditch meetings. These gatherings were addressed on stable ventilation, misuse of electric wiring systems, drainage, and other engineering subjects. Staff members of this division have prepared and delivered a number of radio talks and television presentations.

## ANIMAL HUSBANDRY DIVISION

During the year this division was responsible for the lecture and laboratory work in animal husbandry with the junior and senior students in agriculture, supervision of the farm, and extension work in animal husbandry. More emphasis was placed this year on animal nutrition and animal breeding. In addition this year, this division was responsible for the coaching of a group of four boys who took part in the Inter-school Judging Competition at the Royal Winter Fair.

Crops on the farm during the 1957 growing season were better than average despite the dry season. The only exception to this was the grain corn crop, which was frosted early and consequently did not mature sufficiently to pick. The grain corn crop was put in the silo and made excellent feed.

Green feeding of the dairy herd was again carried on this year to supplement the regular pastures. A new type of feeding wagon for the use of green feeding was built during the winter and will be put into use for the pasture season of 1958.

Rye was cut green and put into a surface silo the third of June. This was self-fed in the fall and winter to the dairy heifers and made excellent feed. A stack of grass silage, thirty-five tons, was put up and covered with polyethylene material (plastic) with excellent results. The cost of material to cover the stack was eighty-seven cents per ton. This silage was fed out in late fall with excellent quality and practically no spoilage.

The pasture program on the farm continues to play an important part. Rotational grazing was carried on with the dairy herd. Fifteen acres were sown with tetra-petkus rye the middle of August and pastured very heavily throughout the fall.

The use of the chisel plow on the farm has been continued. Only ten acres were plowed with the mould-board plow. This area was a very heavy sod and plowed late in the fall.

There was a fair demand for breeding stock from the swine herd during the year. A Canadian Yorkshire boar was used on the English Yorkshire sows.

Fairly heavy culling was done in the sheep flock, which consists entirely of North Country Cheviots. The demand for breeding stock of this breed continues to be very heavy.

Arrangements were made during the winter with two farmers in Eastern Ontario to bring in Shorthorn and Hereford cattle for the students' use.

The milking herd, which consists of Holsteins, Ayrshires, and Jerseys, was used considerably throughout the year by the students for classroom work and also by a number of groups visiting the School. One cow in the herd received a long-time production certificate—a blue seal certificate for 128,151 pounds of milk and 4,634 pounds of fat in eight lactations.

*Herd Average*

<i>Breed</i>	<i>Number on Test</i>	<i>Pounds of Milk</i>	<i>Pounds of Fat</i>	<i>Average Test</i>
Holstein .....	18	13,000	532	4.1
Ayrshire .....	6	9,185	393	4.26
Jersey .....	4	6,355	384	6.0

*Herd Index*

	<i>Milk</i>	<i>Fat</i>
Holstein .....	120	133
Ayrshire .....	123	127
Jersey .....	88	97

*Number of Animals in various age groups on which average is based*

<i>Breed</i>	<i>Mature</i>	<i>4-year-old</i>	<i>3-year-old</i>	<i>2-year-old</i>
Holstein .....	5	1	7	5
Ayrshire .....		1	1	4
Jersey .....		1	2	1

Considerable time was spent during the year on extension work. The following is a summary of the meetings attended:

Meetings addressed .....	12
Fairs, Achievement Days, and Judging Competitions .....	20
Meetings as committee member .....	24
Groups visiting farm only .....	12
Radio broadcasts .....	4

Members of this division served in the following positions, and assistance was given in the following ways:

1. Secretary, Ottawa Valley Sheep Breeders' Association.
2. Secretary, Eastern Ontario Yorkshire Breeders' Association.
3. Director, Ottawa Winter Fair.
4. Member of the Sheep and Swine Committee of the Central Canada Exhibition and the Ottawa Winter Fair.
5. Member of Sale Committee, Ottawa Winter Fair.
6. Member of the Junior Committee of the Ottawa Winter Fair.
7. Member of the Ayrshire Bull Buying Committee for the Eastern Ontario Cattle Breeding Association.
8. Member of the Committee of the Eastern Ontario Soil and Crop Improvement Associations.
9. Numerous requests for information on livestock and livestock feeding were answered by letter and office calls.
10. Fifteen visits were made to gatherings of prospective students during the year.

## CHEMISTRY, SOILS AND FERTILIZERS DIVISION

The activities of this division are summarized under the following headings:

### 1. Lecture and Laboratory Classes to Regular Students

Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in agriculture; mathematics, soils and farm planning to the advanced agricultural mechanics course; and chemistry to the junior and senior classes in Home Economics. Laboratory periods in chemistry, soils, and fertilizers are given in conjunction with the lecture classes.

### 2. Extension

(a) During 1957 a total of 3,477 samples of soil was received for examination. Rapid determination tests were made for reaction, organic matter, phosphorus, potash, calcium, and magnesium. Reports covering the recommendations for fertilizer use, agricultural limestone requirements, and cultural practices were forwarded covering the samples received. Up-to-date equipment enabling the determination of the newer procedures in rapid testing have been installed, thus providing a uniform relationship with other soil testing laboratories.



### (b) Demonstrational and Experimental Field Work

(1) Test plots using two qualities of agricultural limestone and varying rates of application were laid down in Frontenac County.

(2) Test yields and observations covering the fertilizer use on various farm crops involving variations in rate and methods of application and concentration of fertilizer formulas were carried out.

### (c) Meetings attended

During the year 38 meetings were attended where problems relating to soils, fertilizers, lime, and farm fertility practices were discussed.

## DAIRY DIVISION

A course in elementary bacteriology was given for the first time this year to first year students in the agricultural course.

The three-month dairy course was again held but with an attendance of only ten students. All of these were successful in obtaining their diplomas. The following counties and districts were represented in this course: Algoma, Frontenac, Grenville, Hastings, Northumberland, Prescott, Renfrew, Russell, Stormont, and Temiskaming.

The Ontario Cheese Manufacturers' Association generously donated one hundred dollars for prize money for this course and indicated that a similar donation would be made annually in future. A generous donation for dairy course prizes was also received from the Ontario Creamery Association.

Lactic cultures were again supplied to cheese factories and dairies as requests were received. A total of 344 such cultures were supplied to 101 dairy plants. Babcock tests for butterfat were made on 193 samples of milk, cream, or by-products.

Three experimental projects were completed during the year, two of which had been continued since the previous year. In one of the latter, tests for fat and solids-not-fat were made on milk samples from the individual cows of five herds to learn whether the feeding of a mineral mixture rich in copper might improve the composition and yield of their milk. When the 1957 records on two of these herds were compared with similar records for 1956, it was concluded that the composition of the milk was no better but that the total milk yields were greater by about ten per cent.

Work was concluded on a survey of the bacteriological quality of milk received at six different milk plants. Quality of milk was shown in many cases to be closely related to the temperature to which the night's milk has been cooled. Methylene blue and resazurin reduction times were compared with standard plate counts on the 1,113 samples examined during the course of this study.

All these samples were also tested for the presence of substances inhibitory to the growth of lactic starters. Only 0.86 per cent of the samples were definitely positive to this test, although 4.12 per cent were classed as suspicious. Antibiotics used for mastitis treatments are the commonest type of inhibitory substances present in milk supplies.

In another study, lactic starters were examined to determine the extent to which they produced gas during their growth. Much more gas was produced by starters propagated in a medium containing twelve per cent skim milk solids than in one containing eight per cent. High gas-producing starters are a cause of open texture in Cheddar cheese.

Trials were also conducted using a new modified milk product for the propagation of lactic starters. This new medium prevents the survival of bacteriophages which frequently are contaminants in cultures and often result in their suddenly failing. The new medium was found to support the growth of all strains of lactic starters which were tested in it. Growth was less vigorous, however, and it was decided not to employ it as a medium for cultures being sent out to cheese factories.

## DIVISION OF ENGLISH AND ECONOMICS

### Instruction

The work in Farm Accounting was doubled this year with students in agriculture. In addition regular instruction was given in English, public speaking, economics, and civics. The Advanced Course (Agricultural Mechanics) received instruction in English, public speaking, and public relations.

Extra-curricular work in drama culminated in two one-act plays entering a drama festival at Smiths Falls and one play competing at Queen's University, Kingston, in the secondary schools group. Literary Society activities featured public speaking and panel competitions, year-book production, a school paper, and special speaker programs.

### Economics Extension

This division again co-operated with the Farm Economics Branch in recording the third year preliminary work on a tile drainage study in Eastern Ontario. Increasing numbers of graduates and other farmers are seeking help in farm business problems and farm accounting. A further shift in the emphasis of work toward economics in this double division is planned to meet a growing need. Farm accounting extension work through graduates of our School offers a unique opportunity for equipping a nucleus of young farmers with basic information for farm management analysis.

### Public Relations

This division through its two staff members addressed over 1,800 persons on subjects related to agriculture and the activities of the School.

Students totalling 350 from 15 secondary schools visited the Kemptville Agricultural School during a special program in the first week of May. Two counties were the responsibility of this division for liaison visits to prospective students.

The head of the Division conducted the Ontario Junior Farmer delegation to the United Kingdom and addressed groups of Young Farmer Clubs in many areas there.

The Ontario Department of Agriculture Radio Service worked through this division to prepare 31 recordings at the library sound studio here.

Advertising in press, radio, preparation of the calendar, and exhibits were other activities delegated to this division.

### Library

Complete administration of the school library and cataloguing requires year-round attention.

### General School Administration

Many School administrative duties, including details of graduation, scholarships, awards, bursaries, and secretarial work are accomplished in part by the Division of English and Economics.

### FIELD HUSBANDRY DIVISION

In addition to teaching all of the courses in Field Husbandry and Weeds outlined in the K.A.S. calendar, the field husbandry instructor was actively engaged in extension and experimental work.

#### Summary of Extension Work in Field Husbandry

Farmer groups were addressed on 26 occasions. These included annual meetings and summer twilight meetings of several County Soil and Crop Improvement Associations in Eastern and Western Ontario, seed fairs, field days, and conferences.

Assistance was given in the organization and program of four regional Pasture Tours in Eastern Ontario, a Grain Corn Field Day at Foxboro, and a Pasture and Forage Field Day at Ottawa, also in planning the program of and in staging the annual Crop Improvement Conference and Weed Control Conference at the Kemptville Agricultural School.

The instructor judged grain corn clubs and grain club exhibits and at seed fairs, and served on several committees including: the Committee of Eastern Ontario Soil and Crop Improvement Associations, of which he was secretary; Ontario Advisory Committee on Herbicides; Eastern Section of National Weed Committee; Seed Committee of the Royal Winter Fair; the Soybean Committee of Ontario; the Ontario Corn Committee; and the Ontario Committee on Field Crop Recommendations.

Considerable time was given to answering numerous requests for advice and information on crop production and weed control problems by correspondence, telephone, office calls, and personal visits.

Several radio broadcasts were prepared and recorded for the Ontario Department of Agriculture Radio Service. Assistance was provided in the preparation of circulars and bulletins.

#### Experimental Work in Field Husbandry

In order to co-ordinate the experimental work undertaken at the Kemptville Agricultural School with that of other experimental stations in the Province, the instructor served on several committees and attended the annual committee meetings which include the Ontario Corn Committee, Ontario Committee on Field Crop Recommendations, National Weed Committee (Eastern Section), Eastern Canada Cereal Workers Committee, Ontario Committee of Forage Crop Workers, Ontario Soybean Committee, and Ontario Advisory Herbicide Committee. This committee work requires 15 days in attendance at meetings and an equal amount of time to assemble and prepare experimental data.

The only reason that one man has been able to supervise and conduct so much experimental work along with his other duties has been the excellent co-operation and assistance received from the Ontario Agricultural College and the Central Experimental Farm in processing much of the material and the data from the tests.



The experimental program at the School consists mainly of crop testing with some herbicide evaluation work undertaken as time and staff permit. The following statistics will give some appreciation of the nature and scope of the experimental work under way in the Field Husbandry Division of the Kemptville Agricultural School

986 individual plots of varieties of oats, barley, mixed grain, soybeans, potatoes, grasses, red clover, alfalfa, and birdsfoot trefoil; 200 individual plots of grass-legume mixtures; 120 individual plots of grain corn hybrids; 180 individual plots of silage corn hybrids; and 125 varieties of grasses and legumes under observation in nurseries.

In addition to the crop testing program at the Kemptville Agricultural School, seed is assembled for outside tests of grain corn, silage corn, soybeans, oats, and barley. These plots are sampled, yields calculated, and data supplied to County Crop Improvement Associations.

## HOME ECONOMICS DIVISION

During the school term, from October 15th to April 18th, instruction was given in the two-year diploma course and in the one-year homemaker course in Home Economics.

Enrolment included students from ten counties of Ontario and the provinces of Quebec and Manitoba.

Regular classes of instruction and practical work were given in home management, nutrition, family living, applied arts, clothing, home furnishings, and textiles.

The co-operation of other divisions providing instruction in English, civics, chemistry, bacteriology, floriculture, and woodworking to Home Economics students is much appreciated.

Films and field trips were used as teaching aids to supplement class room instruction.

Home Economics students took part in the annual K.A.S. Royal Show, which gave an opportunity for the display of various phases of Home Economics study and of livestock showmanship. The spring fashion show also displayed achievements in the clothing and applied arts to a large group of men and women.

Supervision of meal service and furnishing of the students' residence are the responsibility of this department. The number of meals served to students and visiting groups during the year was approximately 50,000.

Many visiting groups were entertained, their stay in residence being from one day to four weeks in duration.

Extension services included talks and demonstrations to various women's groups, such as Women's Institutes and Church organizations; judging at the local high school achievement day and various Women's Institute projects; open house programs for visiting secondary school students; and visits to prospective students and to Women's Institute meetings to acquaint these groups with facilities of the school and opportunities available to graduating students.

## HORTICULTURE DIVISION

### Instruction

During the school term a course of lectures, laboratory work, and practical instruction was given to the students in agriculture in such subjects as fruit growing, vegetable growing, floriculture, plant diseases, destructive and useful insects, and botany. During the winter term a series of lectures on landscaping was also given to the senior students in Home Economics.

### Demonstration and Extension Work

During the summer months the Horticulture division maintains 27 acres of campus, 15 acres of tree fruits, and about 2 acres of small fruits and garden.

In the apple orchards three different fungicide programs for scab control have been carried on. In one area, the protective materials included Crag followed by Ferbam and Captan. In the second area the fungicides Niacide A and M were used. In the third area Dichlone was used up to calyx time, followed by Ferbam and Captan. During bloom it was necessary to apply an eradicator fungicide and so Dichlone was used throughout. All three programs provided apples free of scab.

In 1956 a replicated strawberry variety and seedling test was set out. In the test virus-free plants of Sparkle, Senator Dunlap, 0-481 (Cavalier), 0-483 (Grenadier), 0-484 (Guardsman), 0-487 (Redcoat) were set out in 30-foot rows. The total yield of the six replicated plots was as follows: Sparkle, 63.4 lbs.; Senator Dunlap, 52.75 lbs.; 0-481, 101 lbs.; 0-483, 76.6 lbs.; 0-484, 128.3 lbs.; and 0-487, 121.4 lbs. The test clearly illustrated the advisability of using the new Ottawa strawberry introductions in Eastern Ontario as compared to old standards such as Senator Dunlap.

On the campus many trees and shrubs are grown to demonstrate the various varieties suitable to our conditions and climate. A number of areas have also been seeded down to different lawn grass mixtures to demonstrate the variations of each mixture.

On the subject of community and farm home improvement, some 18 illustrated talks were given to various groups. Forty-seven calls were made to public institutions that requested help in landscaping, and nine landscape plans were blueprinted for schools, recreation grounds, etc. Assistance in landscape problems was provided to some 109 rural homes during the summer.

During the early summer months, the apple spray service letters for local growers originated from this division. In this connection some 157 visits were made in an advisory capacity to apple growers in the area.

## POULTRY DIVISION

Lectures and demonstrations in poultry and farm meats were given to the school's students in agriculture.

The school flock had a good year in egg production. The breeds represented in the school flock are White Leghorns, Barred Plymouth Rocks, Columbian Rocks, and Cornish. Specimens of all these breeds are useful as class room material. Approximately two hundred turkeys are purchased and raised each year. More experimental work in testing various strains and strain crosses for egg production is being planned.

Extension work carried on during the past year consisted mainly of Poultry Club Achievement Days and visits to farm flocks to assist with problems of buildings and feeding and management.

The division also looked after the banding and blood testing of turkeys in Eastern Ontario under the Ontario Poultry Approval Policy.

Excellent service is available to all poultry producers in Eastern Ontario from the Regional Veterinary Laboratory with respect to disease problems.

## REGIONAL VETERINARY LABORATORY

The fiscal year 1957-58 has been another year of progress at the Regional Veterinary Laboratory, Kemptville Agricultural School. Both services offered and rendered by the laboratory have increased. The acceptance of plans for a new Regional Veterinary Laboratory building highlighted the year. The new laboratory, which is already under construction, will allow an improvement and increase in the veterinary laboratory services offered to agriculture in Eastern Ontario. Work now being done in cramped and unsatisfactory quarters can be expanded, and ample space and equipment will be provided for services and investigational projects which are not possible at present. Much study has gone into the planning of this building and its equipment and furniture.

### Laboratory Mastitis Detection Service

The demand for examination of milk samples for the detection of mastitis has again increased. This service takes the greater part of the time and materials at present. The 52,812 samples analysed in the laboratory were reported as follows:

Positive .....	8,770 .....	16.85%
Suspicious .....	4,880 .....	9.05%
Negative .....	39,162 .....	74.10%
Total number of Camps .....		27,093
Total number of sensitivities .....		80

The samples were from 680 consignments from 455 farms.

### Diagnostic Service

#### FIELD TRIPS — 685

Mastitis consultations .....	63
Copper survey field trips .....	200
Consultation and investigation .....	422

Copper survey trips include visits to investigate suspected deficient herds, to arrange for blood testing and to draw blood, to report results and make recommendations, and follow-up calls. They also include delivery of mineral and periodic calls to herds on special test.

Whenever a serious herd mastitis problem was drawn to the attention of the division either by laboratory examination, owner's request, or veterinarian's request, the farm was visited at milking time and the owner advised on proper milking procedures and management. Excellent results were obtained when owners followed the prescribed recommendations.



The majority of the field trips were made to provide consultation with owners on herd or flock problems, to consult with veterinarians on difficult problems, and to assist in diagnosis and post-mortems.

In cases where practitioners needed help in the field or felt that their facilities were inadequate to perform certain procedures, the facilities of the laboratory were made available for these purposes. There were 38 surgical referrals and 120 medical referrals. In addition, complete veterinary services were provided for the livestock at the Kemptville Agricultural School and the Rideau Industrial Farm.

#### Samples submitted for laboratory examination

Number of consignments .....	686
Number of specimens .....	1,481
Post-mortem examinations .....	1,058
Clinical pathology .....	423

Over two-thirds of the post-mortem specimens are submitted to bacteriological studies in order to confirm gross pathological diagnosis. Histological diagnosis was also used in selected cases. Poultry specimens made up 756 of the 1,058 post-mortem examinations. The clinical pathological examinations were carried out for the most part on samples collected by the laboratory staff, since most practitioners appear to be too busy to utilize this service routinely. A large percentage of the samples for resazurin tests, cuboni (pregnancy) test and parasitological examination were submitted by owners.

#### Lectures and Extension

Instruction was provided for the students at the School in the fall and spring terms. Lectures in bacteriology and animal health were given to the junior and senior years in agriculture. Lectures in bacteriology were given to the junior year in home economics. The students in the dairy short course also received lectures on such subjects as animal diseases which affect the quality of the milk and animal diseases transmissible to humans. Complete lecture notes for these courses are being compiled.

Many requests to speak at meetings in Eastern Ontario were received. Among the groups addressed on various subjects were the Sydenham Farm Forum, the Eldorado Cheese Co-operative, the Hull and District Kennel Club, the Eastern Ontario Association of Milk Sanitarians, the Eastern Ontario Manufactured Milk Producers' Association, and the Eastern Ontario Cheese Makers Association. Various breeders' meetings, Farmers' Co-operative meetings, and 4-H Club meetings were also attended.

A well-attended afternoon and evening meeting for veterinarians in Eastern Ontario was held at Kemptville. Veterinarians in this area appreciate the work done by the Extension Department of the Ontario Veterinary College in arranging these meetings and have asked that they be continued and held more frequently, if possible.

#### Research

Investigation into the causes of abortion and sterility in Eastern Ontario is still being carried out in co-operation with Dr. D. R. Mitchell of the A.D.R.I., Hull. This involves visiting, checking, and doing follow-up work in herds where problems are occurring. Although much of the laboratory work in these herds is being done in Hull, most of the initial contacts are made by the Regional Veterinary Laboratory.

Under the direction of the Committee on Livestock Mineral Problems, the problem of Hypocupremia in cattle in Eastern Ontario is still being investigated. The Regional Laboratory assists by collecting blood samples for copper analyses; helping with preliminary serum extractions; compounding the experimental mineral mixture and controlling its distribution; undertaking field work with the herds under study and investigating reports for suspected Hypocupremia in herds not already placed under surveillance by the Committee. This year work has been extended to include new copper deficient herds discovered in the Dalkeith and Moose Creek areas.

A small experimental animal colony has been established so that further work can be done on Clostridiosis, and in preparation for the time when space will be available for a much longer and more varied colony.

## *Western Ontario Agricultural School and Experimental Farm*

A milestone in the history of the Western Ontario Agricultural School was passed in 1957 in the retirement of Professor J. C. Steckley on September 1. Professor Steckley had served the Institution faithfully since 1937 and was the leader in promoting the establishment of the Agricultural School which opened in 1951. Professor Steckley will long be remembered for his contribution to Agriculture and Agricultural Education in South Western Ontario. It is most fitting that the Student Residence is named in his honour.

Instruction in all phases of Agriculture, extension work in the South Western Ontario area, and applied research at the Experimental Farm continue to be the primary functions of the Western Ontario Agricultural School. An introduction and general survey of the 1957 and 1958 program follows in the immediate paragraphs, with a more detailed account listed in the divisional reports.

### INSTRUCTION

The Agricultural School continued to develop during the year,

1st Year enrolment was 71, with 69 from Ontario

2nd Year enrolment was 55, with 54 from Ontario

The average age of these students appears to be on the increase each year, as well as the academic qualifications. The School still receives a few students with little High School education, but it has been found that if these students have been away from school for a few years, they are very receptive.

Seventy-five percent of the graduates are returning to the farm, most of the remainder taking positions allied with Agriculture.

Basic Agricultural principles are fundamental in the instruction, but, with the rapidly changing Agriculture, the course is altered somewhat each year to meet the needs of the trends.

The Western Ontario Agricultural School is very appreciative of the assistance and co-operation of the following:

1. Agricultural Engineering Extension Services of the Extension Branch in allowing the Extension Specialists stationed at the Western Ontario Agricultural School to give the instruction in Agricultural Mechanics.

2. Ontario Veterinary College in having a Regional Veterinary who has his laboratory in the Administration Building, give instruction in Animal Health and Bacteriology.

3. Agricultural Representatives of South Western Ontario who give instruction on their respective counties.

4. Ontario Department of Lands and Forests who has a representative take a few lectures in Farm Forestry.



Appreciation is also extended to the following for the assistance offered at various times:

Staff of the Dominion Experimental Station and Plant Pathology Laboratory at Harrow; Dominion Entomology Laboratory at Chatham; Radio and Television Stations for student and staff interviews and recordings; Canada and Dominion Sugar Company; Agricultural Organizations of the district; individual citizens, and various Companies who support the School through prizes, scholarships and trophies.

## ACADEMIC FUNCTIONS

### 1. GRADUATION

On Wednesday, May 22, 1957, the Annual Graduation Exercises were held in the Auditorium, with the Honourable William A. Goodfellow, Minister of Agriculture, delivering the Address. Dr. C. D. Graham, Deputy Minister, assisted in the Graduation by presenting diplomas to the graduates.

### 2. BACCALAUREATE SERVICE

On Sunday, March 23, 1958, the Annual Baccalaureate Service for the Graduating Class of the School was held in the Auditorium. The Address was delivered by Reverend W. A. Young, B.S.A., Public Relations Officer and Chaplain, Ontario Agricultural College.

## Student Activities

As part of their education, the students are organized to perform certain functions and carry responsibility. Such organizations are:

Student Council — which assists in general organization, discipline and social functions.

Literary Society — sponsors Public Speaking, Skits, etc.

Athletic Society — organizes and administers sports program.

Year Book — a Second Year sponsored project, financed by the students through the sale of advertisements.

W.O.A.S. Review — a show window of some of the practical work completed during the year, including livestock and crop showmanship and educational exhibits — which attracted approximately 1,000 visitors.

## EXTENSION

Extension plays a major role as has been the case since the inception of the Experimental Farm. A more detailed report on extension is given by the different divisions, but a few events are listed at which the Western Ontario Agricultural School was host.

Two-day program devoted to Herbicide work, in co-operation with Kent County Soil and Crop Improvement Association and the Federal and Ontario Departments of Agriculture.

Junior Farmers' Field Day, an all day program of competitive sports, square dancing, etc., for the five South Western Ontario counties.

County Soil and Crop Improvement Association's tours and overnight accommodations.

4-H Clubs programs.

District 9 Fair Board Picnic.

Livestock Field Days and Picnics.

Judging Competitions.

Russian Agricultural Delegation who were interested primarily in Crop Production.

Three-day Programs of the Eastern Canada Section Weed Committee.

Two-day Conferences of Women's Institute of South Western Ontario.

Junior Farmers' Leadership Training School.

Bank Managers' Course to familiarize same in present Agricultural conditions.

Twentieth Annual Farmers' Week Programs, with prominent Agriculturists of Ontario as guest speakers, supplemented by members of our own staff—total attendance, 2,000.

Co-Operative Lectureship, sponsored by Thamesville District Co-Operative.

Delegation of Romanian Agriculturalists, primarily interested in Crop Production.

Trustees and Ratepayers of South Western Ontario Annual Conference.

Annual Sheep Shearing and Wool Preparation School, in conjunction with South Western Ontario Sheep Breeders' Annual Meeting. Appreciation is extended to the Canadian Department of Agriculture, the Canadian Co-operative Wool Growers Association and the Ontario Veterinary College for their assistance.

Annual Meeting of South Western Ontario Yorkshire Breeders.

## RESEARCH

Programs in this field have been extended recently as a large portion of the Experimental Farm is devoted exclusively to plot work. Greenhouse facilities have been doubled. Livestock population and feeding trials have increased. Research work is described in more detail under the Division reports.

## ANIMAL HUSBANDRY DIVISION

Since South Western Ontario is the centre of production of high energy crops, it is imperative that feeds from such crops for all classes of livestock be tested.

A ration composed principally of corn and cob meal has been used on the Dairy cows for 7 years. The herd has responded well to such a ration with no noticeable ill effects during this period.

During the fiscal year the R.O.P. averages are as follows:

	<i>Milk</i>	<i>Butterfat</i>
Holstein-Friesian .....	13,270 lbs.	515 lbs.
Guernseys .....	10,126 lbs.	532 lbs.

This is felt to be a creditable showing since all feed used is home grown, except for a small amount of bran fed during the freshening period. The cattle are maintained under loose housing conditions and are used extensively in classroom work.

The beef herd, composed of Shorthorns and Herefords, is maintained on a roughage program. An attempt is made to have the calf crop dropped as early in the year as possible so that the calves come off pasture at a minimum weight of 500 lbs. Experience is that the cow-calf proposition is sound in a cash crop area.

A sheep flock of Southdown and Suffolks are maintained for classroom work and windbreak pasturing. A Southdown lamb from the School flock was the Champion Market Lamb at the 1957 Royal Agricultural Winter Fair.

### Swine

Two selected strains of Yorkshire hogs are being maintained and selected for economy of gain with maximum carcass quality, using maximum balanced quantities of corn, the predominant and most productive grain crop of South Western Ontario.

In addition to a breeding program, feed consumption, rate of gain and carcass quality studies are being carried on on a modest scale. This work has been greatly enhanced by the Danish Style Feeder Barn, and more latterly by the open air feeder pens.

To determine the proportions of corn to concentrate would be used by the hogs, to date, all trials have been on a free choice basis, using whole shelled crib dried corn, at approximately 15 to 17% moisture and free choice pelleted protein concentrate at 35 to 36% protein level and containing low level antibiotics. A preliminary trial did show a reduced consumption of pellet concentrate where the antibiotics were omitted. In the corn trials a random group from several litters is used, and a comparison made with litter mates on Advance Registry Ration.

### Cross-breeding Trials

The first 3 way cross group is now on feed, but to date results have been obtained only on the single cross, using Yorkshire sows as the basis on the female side, and bred to Berkshire, Chester White and Landrace boars. These crosses have been fed to market on Advanced Registry Ration, and on corn and concentrate.

Due to an increase in the prevalence of certain diseases within the area, this program has been greatly hampered, as to date the Farm has depended on the use of local breeders' boars, and there is hesitation to move breeding stock until this disease problem subsides.

Results to date would indicate a need for very strict selection of the individuals of the crossing breeds for type — and also for blood lines that will nick to the Yorkshire base. For example, two Landrace boars, both of excellent type were used on two Yorkshire sows of identical blood lines. One group on A.R. ration resulted in 75% B, 25% C hogs, the other group on similar ration resulted in 60% A, 40% B, hogs on the same ration — both groups to market in approximately 5½ months.

To date, the Landrace-Yorkshire cross has been more consistent in early maturity but moderately high in feed conversion, while the Berkshire-Yorkshire cross has been consistent in high grade (70% A), medium feed conversion, and a variation in maturity from very early (4 months 20 days) to fairly slow (6 months).

Chester White purebred stock is scarce and quality very mediocre. Results, therefore, have not been encouraging due to a lack of the improved Chester strains.



## Facilities

Our new open air feeding facilities for market hogs has increased our feeding trial capabilities. It has also been a factor in reducing the incidence of virus pneumonia in gilts carried over to the breeding herd.

## Market Cattle

The steers from the Shorthorn and Hereford purebred herds were separated and placed in the feed lot on December 6, 1957. Six head were placed on a 350 gm. level of Aureomycin and the rest used as check for 10 days. Although the group fed Aureomycin started on feed more quickly, at 28 day weighing there was no increase in gain due to the treatment, however, neither group had any sign of shipping fever or other infection.

The following feeds were used and results recorded — this was designed as a carrying ration for steers going to grass and to be finished in the fall of 1958.

### GROUP 1 — 6 head

1 lb. 44% Soybean Oil Meal per head per day

FREE CHOICE Grass legume hay, mineral salt and water

7 lb. corn silage per head per day

Gains on 4 x 28 day feeding periods

<i>Start</i>	<i>End</i>	<i>Gain</i>
2,685 lbs.	3,910 lbs.	1,225 lbs.

Gain per head 204 lbs.

Gain per head per day 1.8 lbs.

### GROUP 2 — 6 head

3 lb. grain and conc. (equiv. to 44% Prot.) per head per day

(3 parts corn and cob meal, 2 parts oats, 1 part Soybean Oil Meal)

FREE CHOICE Grass legume hay, mineral salt and water

7 lb. corn silage per head per day

<i>Start</i>	<i>End</i>	<i>Gain</i>
2,695 lbs.	3,890 lbs.	1,195 lbs.

Gain per head 199 lbs.

Gain per head per day 1.77 lbs.

The group 1 on Soybean Oil Meal had a considerably greater appetite for hay after the first 56 days. Thus group 1 ate approximately 15 lbs. hay per head per day as against 10 lbs. per head per day for group 2.

Feed cost per steer per day

21¾¢

Feed cost per steer per day

20½¢

At present cattle prices difference in gain would just offset the higher feed cost of group 1. If the roughage portion was not priced at going retail rates, or the grain used in group 2 were used to feed pork thus bringing higher than present market grain prices, the advantage of Soybean Oil Meal alone would be obtained. It was found where one wishes to increase roughage intake, still make adequate gains per day and have the cattle in fair bloom. 1 lb. Soybean Oil Meal per day will replace a moderate grain diet.

### Warble Fly Control

One-half of the market steers were treated on January 3, 1958 with Trolene systemic insecticide. No set-back in feeding, nor in ultimate quality was noted, and as of March 31, 1958 all Trolene treated steers were free of warble grubs, while 75% of the untreated stock showed considerable warble infestation.

### FIELD HUSBANDRY DIVISION

The duties of this Division may be summarized as follows:

- (a) Research into crop production problems including those of varieties, cultural practices and fertility.
- (b) Distribution of seed of many of the varieties recommended for South Western Ontario as well as the processing of seed for local farmers.
- (c) Extension, which includes the setting out of demonstration plots of many crops in each of the counties of South Western Ontario.
- (d) Production of feed for the livestock maintained on the Experimental Farm.

### Research

A fire of unknown origin destroyed the experimental dryer on August 14, 1957. Samples from an extensive oat testing program as well as those from many hay and pasture plots were lost in the fire. Considerable damage was caused to the adjoining Seed Cleaning Building and it was necessary to replace or repair much of the processing equipment as well as some specialized plot machinery. To complete the testing of the fall crops, temporary bins were constructed in the field-corn dryer. Although the temporary drying equipment was not entirely satisfactory, most of the experimental material was salvaged.

Crop sequence studies were enlarged in 1957 with an eventual goal of obtaining more concrete information on the effect of previous crops. This is a long term program which was begun to discover some of the effects upon soybeans. Other crops will be studied as the program develops.

Variety tests were conducted at St. Thomas with the co-operation of the Ontario Department of Health and in all of the counties serviced by this institution. The Soil and Crop Improvement Associations of the various counties have given valuable assistance. Variety and mixture tests alone accounted for almost 2,400 plots in 1957. A summary of the number of plots is as follows: Hybrid Corn, 758; Soybeans, 305; Field Beans, 135; Rape and Kale, 48; Wheat, 200; Winter Barley, 258; Oats, 348; Hay and Pasture, 300.

As a result of the testing program, a license was applied for and granted to cover the Sanilac variety of Field Beans as well as some Hybrid Corn varieties.

Studies on width and population were continued, with most attention being given to two varieties of Field Beans to discover the possibilities of direct combining the crop.

### Seed Distribution and Processing

The Experimental Farm continued to produce a quantity of Registered and Foundation seed for distribution to farmers, marketing boards and for crop improvement projects. Much seed was destroyed in the fire in the dryer in August and so

the quantity was considerably reduced. Varieties distributed were as follows: Winter Wheat — Genesee, Richmond, Cornell 595, Dawbul; Winter Barley — Hudson, Kenate, Tennessee, Wong; Oats — Rodney, Simcoe, Garry; Soybeans — Harosoy, Chippewa; Field Beans — Sanilac, Michelite.

The demand for the seed processing facilities has decreased probably due to commercial availability of registered seed of new varieties. The trend toward the buying of seed requirements rather than cleaning home grown seed is increasing.

## EXTENSION

The institution of a scheme of demonstration plots in each county of South Western Ontario has been very successful. With the co-operation of the local Soil and Crop Improvement Associations, plots now include winter wheat, winter barley, oats, corn and soybean varieties. In most cases, the plots consisted of all of the recommended varieties as well as newer varieties and those not adopted. Many farmers inspect these demonstrations each year.

Field days or twilight meetings were held at sites of these plots and much interest has been shown in choosing better varieties.

Extension duties in 1957 included: Attendance at 58 meetings; Attendance at 6 crop tours; Making of 8 recordings; Judging at 6 seed or fall fairs; Judging 3 crop competitions.

## Farm Production

Total area of the various crops under cultivation in 1957 is as follows: Winter Wheat — 32 acres; Winter Barley — 6 acres; Winter Oats — 2 acres; Spring Oats — 33 acres; Silage Corn — 13 acres; Grain Corn — 45 acres; Soybeans — 4 acres; Field Beans — 22 acres; Potatoes — 4 acres; Hay — 63 acres.

The remainder of the farm is devoted to pasture and testing programs.

Most of the grain and all of the hay and silage is used to supply feed for the livestock on the Experimental Farm.

Yields were above average in 1957 for wheat, winter barley, grain corn, potatoes and hay, while field bean and oat yields were somewhat disappointing.

## SOILS DIVISION

Soils extension and advisory service is carried on with the County Agricultural Representatives, and such groups as 4-H clubs, Junior Farmers and Crop and Soil Improvement Associations.

## Extension

Many requests for assistance, both individual and group were received, and these were dealt with as time permitted. Specialized soil fertility problems are becoming more important as shown by the increase in demand for soil advisory service.



<i>Senior Meetings:</i> — attended and addressed — involving Soils and Improvement Association; Night Schools, Farm Boards .....	15
<i>Senior Meetings:</i> — attended as committee member, etc. — not speaker .....	6
<i>Total Senior Meetings:</i> .....	21
<i>Junior Meetings:</i> — attended and addressed — Jr. Farmers, 4-H Clubs, etc. ....	2
<i>Junior Meetings:</i> — attended to assist — not addressed .....	3
<i>Total Junior Meetings:</i> .....	5
<i>Visits to Farms:</i> — Specific Soil Problems .....	12
Miscellaneous .....	3
<i>Total Farms Visited:</i> .....	15

### Soils

Requests for soil analysis and fertilizer recommendations are on the increase with present soil testing methods being substantiated by field experiments. An electric pholelometer for reading phosphate tests has been installed.

Approximately three hundred farmers used the testing facilities and analysis and recommendations were completed on some 1,000 samples.

In addition, the soils staff sampled and analysed some 125 samples from experimental plots. The demonstrations that were established in 1956 were continued.

### County Demonstrations

In co-operation with the Elgin County Crop and Soils Improvement Association, a nitrogen fertility demonstration was set up. This demonstration involved using four nitrogen fertilizer carriers, at three different levels of nitrogen, top-dressed on fall wheat at two application dates, early spring and late spring.

### Irrigation

In co-operation with the Department of Agricultural Engineering, O.A.C., and the Extension Branch, irrigation tests were continued with early potatoes, white beans, soybeans, sugar beets and tomatoes. Fertilizer was applied with the objective of optimum yields.

The summer of 1957 was not too conducive to irrigation response as the moisture level was well above average.

The plots were located on a Brookston clay loam soil. Irrigation was applied on two occasions. Almost immediately following the second irrigation, a good rain-fall came and possibly wiped out any effects that the irrigated areas might have had over the non-irrigated plots.

The evaporation pan technique was used to determine the irrigation schedule. In general, the crop response to irrigation was negligible.

## HORTICULTURE DIVISION

Under this heading are included experimental and extension work in Botany, Entomology and Herbicides. Lectures in these subjects are given to W.O.A.S. students throughout the winter.

A highly successful three-day meeting of the Eastern Section of the National Weed Committee was held here in October under the auspices of this Department. It was well attended by delegates from all Eastern Provinces.

Wet, cool weather in the latter part of the growing season encouraged the spread of late blight in tomato fields. Serious losses occurred wherever an adequate spray program was not carried out.

A serious infestation of plum curculio was experienced in the old apple orchard on this farm. The cause for this was probably the dense cover of weeds which provided ideal overwintering conditions. Almost every fruit in the three and one-half acre orchard was injured.

The addition of a new greenhouse, 100' x 52', was one of the highlights of the year. One-third of this greenhouse was arranged as a potting or working-room for students, a convenience very much appreciated by students and staff. Also the extra planting space has made it possible to expand propagation work both for greenhouse plants and for transplants for summer bedding.

Late blight of tomatoes in the greenhouse caused a serious loss.

Root-knot nematodes are commencing to give trouble in our vegetable garden. This will give opportunity after another year to try out control measures.

In co-operation with other departments here and at Guelph irrigation and testing of tomato varieties was continued. This horticultural division planted, cultivated, sprayed and harvested the tomatoes. The results are summarized in a special circular on irrigation.

Lectures to various organizations and field trips to growers with problems have increased.

## Herbicides

Screening tests with new herbicides and further experiments with those of longer standing were continued. A brief summary of the more outstanding trials and results follow in this report.

The search for new herbicides for weed control in table beets was continued. A series of tests were conducted both on muck and mineral soils using eleven different chemicals. Only Radox (CDAA) and Vegedex (CDEC) showed promise and in each case fair to good weed control was obtained for about three weeks. Table beets were damaged by the following chemicals—3Y9, Alanap 206, Monuron, Simazin and Chloro I.P.C.

A number of tests were conducted on muck soils in order to find new herbicides for weed control in onions. All ten chemicals tried were applied as pre-emergence sprays. Neburon and Simazin gave weed free stands for most of the season. Radox, Vegedex and Chloro I.P.C. gave fair to good weed control for about three weeks. Only one chemical, namely, E.P.T.C. damaged the onions.

Natrin was applied around established tomatoes for residual, pre-emergence weed control. The results indicated that this treatment saved one hand hoeing and greatly reduced the work in the second. In a spot test, well established tomatoes

were treated with Simazin. This set the plants back for about 14 days, but they recovered and fruited normally.

A granular form of Alanap — (Alanap 20G) — was applied pre-emergence, in and around established melons and fully emerged cucumbers. The chemical gave fair to good weed control on Mineral Soils but failed to give control on the muck soils.

Studies were continued on weed control amongst perennial and annual flowers with the two herbicides Natrin and Sesone. Mild damage was observed on the two annuals, Ageratum and Bell of Ireland. Weeds were controlled for 3 to 4 weeks following each application.

Large plots of Soybeans and White Beans were sprayed with premerge (DNBP) in the cotyledon and first true leaf stages. Unfortunately, after the treatment high temperatures caused considerable damage to the crop; however, the soybeans showed remarkable powers of recovery even where high rates were used.

Simazin was an outstanding pre-emergence herbicide in the tests conducted on Sweet and Field Corn. The only weeds to resist the treatment were velvet leaf, barnyard grass and couch grass. However, the latter was kept in check when the treated area was cultivated. The plot was seeded with clovers about 6 weeks after application but these failed to become established. Greenhouse tests for residues revealed toxicity up to nine months after application. The results of tests on samples of soil taken at monthly intervals (5-8 months) revealed a rapidly diminishing toxicity until at 9 months the symptoms appeared but the plants were not killed. In two tests where soil was kept in the greenhouse for two months similar results were obtained on testing these as those obtained when the samples were first brought into the greenhouse.

It was reported last year that a test on an Ontario-wide basis was begun to investigate control of Poison Ivy. The Ridgetown tests, which were in keeping with other centres, showed the superior killing powers of Amino Triazole over Silvex for a one spray kill under all conditions tested.

Nutgrass, a troublesome weed in moist soils was effectively controlled with Dalapon, Simazin and Amino Triazole. However, for a complete report regrowth and possible soil sterility must be checked in the year 1958.

Amino Triazole was tested in several locations for the control of some of the hard to kill perennials. Results on Milkweed, Canada Thistle, Curled Dock and Horse Nettle look encouraging but the results cannot be accurately evaluated until next year.

## POULTRY DIVISION

### Chickens

About 300 hybrid laying hens have been maintained on the farm since April, 1957.

### Broilers

Six hundred Vantress X Arbor Acre mixed chicks were purchased for a broiler experiment. With the interest being shown locally in wire and slat floor laying houses, it was felt that some information should be obtained with broilers on this type of flooring in case these houses should at any time be converted to broiler production.

The chicks were divided into 2 lots of 300 each. One lot was started on a wire floor while the other was started on dry sawdust litter. No further litter was added



and the chicks remained on these floors for 11 weeks. A commercial broiler starter in the crumbled form was fed for 5 weeks followed by a pelleted feed for the next 6 weeks.

There were no disease outbreaks in either pen. During the first 10 weeks the average weight on the wire floor was slightly higher than that on the litter floor. It is doubtful if these differences were significant if analyzed statistically. By 11 weeks the birds on the litter were slightly heavier than those on wire. This was probably due to sore feet and breast blisters developing in the birds on wire.

The average weight at 11 weeks of age was 4.48 lbs. on wire and 4.51 lbs. on litter. These are exceptionally good weights for this age. Average feed conversion for the entire period was 2.76 lbs. feed per pound of live broiler and the total feed and chick cost was 17.4¢ per lb.

The birds were killed and eviscerated by the students at 11 weeks of age. The birds on litter showed no signs of breast blisters or sore feet. Those on wire had a very high percentage of blisters which would detract from their appearance and so bring a lower price.

It is concluded that these heavy, fast growing broiler chicks should not be grown on wire after possibly 8 weeks of age. Further work will be carried on in this respect with processing commenced as soon as the birds reach a commercially marketable weight. In this case it would be about 8½ weeks.

Another 600 Vantress X Arbor Acre chicks were purchased in February, 1958. These chicks were sexed at the hatchery with each sex being started separately. The cockerels will be caponized and grown to maturity while the pullets will be grown as broilers.

## Turkeys

About 300 White Holland turkeys were started in March, 1957, and grown on the slatted porch. During the month of June the males were processed as turkey broilers. The females were carried to maturity on the porch and then processed for use in the dining hall of the school.

A few turkey breeders were retained from the previous season and artificial insemination was practiced. These supposedly fertile eggs were hatched in our own incubator. Very poor results came from the artificial insemination and further experiments will be carried out. It was necessary to supplement this lot with commercial turkeys. About 200 in all were started.

These poults were started on wire floors in the windowless brooder house and allowed to run on an outside porch until 8 weeks of age. They were then moved to the 4 growing pens with about 50 per pen. Whole corn cobs and chopped corn cobs were used as litter. All feed used from 0-24 weeks was medicated against blackhead.

Because of the incidence of sore feet on birds on the whole corn cobs it was concluded that the cobs should be chopped for best results. The birds are more comfortable and weight gains were better on chopped cobs.

## AGRICULTURAL MECHANICS DIVISION

Work in this Division is taken by the Extension Specialists of the Agricultural Engineering Services of the Extension Branch. They are in charge of all Agricultural Engineering in the Counties of Essex, Kent, Elgin and Lambton, as well as the

instruction at the Agricultural School and Irrigation Research projects on the Experimental Farm.

Appreciation is extended for the services rendered by these specialists in building plans, machinery purchases, drainage and general recommendations pertaining to this division of our program. Such an arrangement is unique and is working to the satisfaction of everyone concerned.

#### VETERINARY DIAGNOSTIC LABORATORY

Work in this Division continues to centre around diagnostic and consultation services to the veterinarians and farmers of South Western Ontario, as well as the teaching of Animal Health and Bacteriology. The following summary represents some of the services rendered by the Regional Veterinarian:

Post Mortem Examinations: — Poultry — 784; Cattle — 20; Pigs — 143; Sheep — 10.

Live Examinations Only (Brought to Laboratory): — Poultry — 4; Cattle — 1; Pigs — 16; Dogs & Rabbits — 3.

Post Mortem Specimens (Tissues submitted for bacteriological examination): — 44; Parasitological Tests — 50; Cuboni Tests — 17; Blood Tests — 26; Semen Samples — 8.

Mastitis Diagnostic Services: — 22,010.

The above figures represent only a part of the work conducted at the Regional Laboratory. Because of the increase in the livestock and poultry population in South Western Ontario, consideration in the near future may have to be given to increasing the facilities at the W.O.A.S.

## *Demonstration Farm — New Liskeard*

### Foreword

The Demonstration Farm is located in the Township of Dymond on the southern fringe of the area known as the "Little Clay Belt". The soil is representative of a large part of the soil occurring in the area and topography for the most part is flat and for successful crop production, drainage continues to be the chief problem.

As in the past, the farm continued to give leadership in animal and crop production. All enterprises are conducted on as practical a basis as possible. Some experimental work with spring and winter grains was carried out by the Field Husbandry Department of the Ontario Agricultural College.

Although dry at times, the crop year of 1957 was quite favorable and most crops, excepting corn, were above average in yield and quality. Seeding was completed about the 20th of May under ideal conditions. Growth during the month of June was not rapid due to dry weather, but this condition was corrected by Hurricane Audrey in the last week of June, when approximately 7" of rain was recorded. For the most part the hay was harvested under ideal conditions with quality and yield excellent. Dry weather during late July and August decreased somewhat the yield of the grain crops. However, most grain crops of the farm averaged 65 bushels per acre. With the exception of three acres of Shield oats, the threshing of spring grains was delayed three weeks by wet weather in early September. As a result most of the registered seed grain went down to No. 2 on colour alone. Fall ploughing was completed in the last half of October. Due to dry weather in August, pastures were not productive and the beef herd in particular were fed hay on pasture from the middle of August. An excellent hay crop permitted this without concern for adequate winter supplies of roughages.

### Junior Extension:

The Demonstration Farm and its facilities make it convenient to carry out Junior Extension work in the area. The Achievement Days for Junior Farmers and 4-H clubs are usually held at the Farm. With the stock assembled at one point, such program can be carried on with ease and at the same time these young people have an opportunity to view operations in progress. Four young farmers from England visited the farm in July. Two groups of students from the Agricultural School in Ville Marie, Quebec toured the farm during their area trip. Public School students from the district also visited the farm as did many other groups. For the most part the Demonstration Farm stock is used for the North-Eastern Ontario Inter-Club live stock competitions held in Temiskaming in Ontario.

### Senior Extension:

Many senior adult extension groups are entertained during the year. The Peel County Crop Improvement Association members visited the farm in June of last year. The farm and the Experimental Plots are always a popular part of the local annual Crop Improvement Tour. In addition, several hundred visitors, both local and from other Districts in Northern Ontario, passed through the Farm grounds during 1957.



### Haymaking:

Up until the end of June, it appeared the hay crop would be very much below average. The rainfall which accompanied Hurricane Audrey was responsible for producing almost a two ton per acre yield on all hay meadows on the farm. Wet fields prevented the start of haying operations until around the 10th of July. Approximately 12,000 bales of high quality hay were harvested. The quality could be considered as excellent and is shown by the herd of beef cattle, which wintered outside on hay alone. Approximately 50 tons of hay will be left over this spring.

Last Fall 20 acres of new seeding was divided in half. Ten acres were given an application of 160 lbs. of 0-20-20 per acre while the other 10 acres were fertilized at the rate of 80 lbs. of triplephosphate per acre. This spring the complete area will be topdressed with 100 lbs. of ammonium nitrate. Every spring the hay meadows are given an application of 100 lbs. of 10-10-10 fertilizer and this practice is showing good results. Usually some hay is recovered from rotational grazing areas but with the dry season during 1957 this was not available.

### Pasture Management:

In the regular farm rotation, pasture occupies the 5th and final year. Generally rotational grazing is practiced on this area by dividing it into approximately 3-7 acre strips. Our dairy herd pastured in this manner, but because of the dry season were moved to a new area about once a week. It was a poor pasture season and consequently supplemental feeding of hay was necessary. When the cattle were moved from one strip to another the droppings were harrowed and the area clipped to rejuvenate the growth and destroy any weeds present.

Approximately 65 acres adjacent to the Wabi River have been seeded to long term permanent pasture mixture. The beef herd and sheep flock are for the most part pastured in this area. This is treated in a similar manner as the pasture area in the crop rotation.

Seven acres of permanent pasture were seeded in 1957 with the following mixture:

6 lbs. alfalfa, 2 lbs. ladino, 7 lbs. brome, 3 lbs. orchard, 2 lbs. climax, 2 lbs. meadow fescue, 4 lbs. perennial rye.

One bushel per acre of Roxton oats was sown with this mixture as a nurse crop. This nurse crop was pastured off about six weeks later or when the crop was 6"-8" high. It was allowed to recover in the fall and 80 lbs. of triplephosphate was applied. On this area 100 lbs. of ammonium nitrate will be applied shortly.

### Silage:

Corn was the only crop ensiled during the year. Nine different varieties of corn were seeded in early June. Growth was slow due to dry and cool weather. A deluge of rain left the field caked after being submerged by water for several days. Following through the summer, dry weather prevailed and with early frosts, the corn stand was a failure. About half a silo was filled with frosted corn. Results were entirely unsatisfactory.

### Weed Control:

Weeds are controlled in pastures by clipping periodically during the growing season. Spraying to control sow thistle was only moderately successful last season.

At the time when grain fields were ready for spraying with 2-4D and MCP, a deluge of rain prevented the work being done. Therefore much roguing was necessary in spite of spraying with 2-4D and MCP. Roadsides and lawns are sprayed annually with 2-4D ester to control dandelions and other roadside weeds. In this operation, an old horse drawn converted potato sprayer finds limited use. Twitch grass is a constant threat in low-lying fields and this is a continuing operation when weather permits.

#### Drainage:

The tile drainage system is working well after five years of operation. It is on this field that the experimental grain plots are located. During the season an additional 700 bales of alfalfa second cut hay was obtained from this area.

#### Experimental Plots:

As in the previous two years, the Field Husbandry Department, established grain plots at the Demonstration Farm. The Demonstration Farm was selected as one of the several locations in Region E for Regional Testing for Barley, Oats and Hay pasture Mixtures. In addition winter plots were established in late August containing varieties of Winter Rye and Winter Wheat. These plots have come through the winter well.

#### Regional Tests — Hay and Pasture Mixtures:

The following mixture was established on two different locations — one on good drainage and one of fair drainage.

<i>Variety</i>	<i>Good Drainage</i>	<i>Fair Drainage</i>
Verral Alfalfa .....	8 lbs.	6 lbs.
Lasalle Red Clover .....	2 lbs.	3 lbs.
Ladino .....		1 lb.
Climax Timothy .....	4 lbs.	5 lbs.
Lincoln Brome .....	6 lbs.	6 lbs.

#### Regional Test Oats and Barley:

The regional test established on the Farm included oats and barley and mixtures. The plots were excellent and the following are results as taken from a preliminary publication of the Regional Tests and applies to the New Liskeard location only.

#### YIELD IN LBS. PER ACRE (Region E. Oat and Mixture Test 1957) — New Liskeard

<i>Variety</i>	<i>Yield</i>	<i>Mixture</i>	<i>Yield</i>
Ajax	2975	Ajax-Montcalm	2961
Shield	2788	Garry-Brant	3381
Garry	3134	Shield-Nord	2997
Rodney	3138		
Glen	2887		
Fundy	2965		
Beaver			

## YIELD IN BUSHELS PER ACRE (Region E. — Barley Test 1957) — New Liskeard

<i>Variety</i>	<i>Yield</i>
Brant .....	70.7
Montcalm .....	64.2
Parkland .....	68.1
Nord .....	66.8
Herta .....	77.7
GB 61 .....	75.1

**Livestock:**

Registered livestock on the Farm consists of Herefords, Yorkshire swine, Suffolk sheep and a team of Percheron horses. There are also a number of grade Herefords which were established in 1952 from fifteen foundation cows purchased on Manitoulin Island. In addition there is about twelve Hampshire x Suffolk ewes. Surplus breeding stock is disposed of as the supply warrants and when demand is present. Market animals are sold generally through the Temiskaming Producers' Co-operative, however a few have been sold through the Temiskaming Community Sales Arena, which was opened in the New Liskeard area in June of 1957.

The pure bred Holstein herd was sold at a dispersal sale in October. Forty-two head including mature cows, yearling heifers and calves were sold for an amount slightly exceeding \$7,000.00. These animals were for the most part purchased by local milk producers, however, a few head went to the Province of Quebec, Districts of Cochrane, Sudbury and Nipissing.

In order to increase the beef numbers and to focus attention on the beef cattle industry in the north, it was decided to disperse the dairy herd and a successful sale resulted.

**Herefords:**

For the present, the grade Hereford herd is being maintained and promising heifers are being retained to build up the herd. During the fall and winter 22 bred registered heifers and a bull were added at the farm. The Hereford bull is a performance tested sire, and gained 2.91 lbs. daily while on test. Queen's Diamond Mischief will be put into service in June so that in as far as possible, calves will be dropped in March and April.

The purpose of the beef program is to focus attention on feeding and growth studies of beef cattle. Information will be assembled on hereditary characteristics of various blood lines, by comparing various female families and by use of different sires. The program will be under the supervision of the Live Stock Branch, Extension Branch and the Animal Husbandry Department.

In December of 1957, eight grade steers were sent to Guelph to go on test. This was the first shipment and all male calves will be handled in this manner. Female calves will be used as herd replacements and eventually surplus females will be sold locally.

Since it was necessary to keep the main barn heated during the winter about half the herd was stalled. The remainder wintered in an open shed and wintered well on hay alone.

All cattle are in a thrifty condition and will be going to pasture in fine fleshing.



**Swine:**

Five Yorkshire sows and one boar are the nucleus of the swine herd. Three of the sows were born and raised on the farm while the others are two sows purchased from the Ontario Agricultural College.

Farm Hogs are fed home grown grain and prepared concentrates with butter-milk. Market hogs are generally disposed of through the local Co-operative and breeding stock is disposed of when the demand is present.

**Sheep:**

The sheep flock consists of 12 Suffolks with the remainder being registered Hampshires and Hampshire Suffolk Crossbred ewes. Culling is carried out yearly with the intention of reaching an entirely purebred Suffolk flock. The farm flock is dipped annually and treated for internal parasites twice yearly. Wool is sold through the Co-operative Wool Growers in Toronto and market lambs are sold through the Temiskaming Co-operative.

No Suffolk females have been sold to date, however the occasional ram lamb is sold in the fall.

**Poultry:**

In the past, the poultry flock of approximately 400 Plymouth Barred Rock hens were incubated and raised on the farm. However, a change in the poultry program has been initiated. Instead of hatching in 1957, approximately 250 Columbian Rock pullets along with 250 White Leghorn pullets were purchased from the Ontario Agricultural College. These chickens are being brooded and as yet have not been on the range.

In the laying pens there are approximately 375 one-year old hens and these will be marketed as the pullets come into production.

**Breeding Stock Distributed From the Farm in 1957:**

	<i>Male</i>	<i>Female</i>
Holsteins .....	3	42
Sheep .....	2	—
Swine .....	7	3

Poultry: Hens — 83, Roosters — 476, Pullets — 222, Baby Chicks — 100.

**Weather Report 1957:**

	<i>Sunshine</i>	<i>Rainfall</i>	<i>Snowfall</i>	<i>Maximum Temperature</i>	<i>Minimum Temperature</i>
January .....	86.6	—	9.8	43	—45
February .....	104.1	—	21.0	43	—29
March .....	202.1	—	—	47	—14
April .....	165.9	.9	.5	71	4.0
May .....	189.1	.79	—	85	17
June .....	159.3	6.87	—	89	27
July .....	256.4	2.28	—	98	38
August .....	261.2	.71	—	86	28
September .....	150.6	7.24	—	82	—
October .....	114.4	7.8	—	73	12
November .....	41.0	2.3	2.75	54	— 5
December .....	55.1	6.7	14.75	57	—20.5

## *Strathclair Farm*

Strathclair Demonstration Farm at Sault Ste. Marie, comprises approximately 300 acres, and is located in the Township of Tarentorus in the District of Algoma. This farm is operated by the Department of Agriculture in the interest of education and research. At present ordinary farming operations are being carried on and a beef herd of Hereford cattle has been established.

The topography is flat except for approximately forty acres of rolling pasture land. The accumulation of surface water on the flat land has presented a drainage problem. The use of open ditches has helped this situation considerably. The soil is of a sandy loam with a small area of clay loam.

### Seeding

Unfavorable weather conditions hindered early seeding operations. The rainfall during May was very heavy. Seeding operations were completed by June 7th with approximately forty acres seeded to Garry oats, which were under sown with a mixture of Common Red Clover, Alsike Clover, Climax Timothy and Meadow Fescue. This field was fertilized with 4-24-12 at the rate of 300 pounds per acre.

Another thirty acre field was summer fallowed until mid-August in hopes that the wild grass and Reed Canary Grass would be "killed out." This field was given an application of manure and seeded with a mixture of Red Clover, Alsike Clover, White Dutch Clover, Climax Timothy and Fescue. The seedlings were well established by Fall forming a lush mat. This field has remained covered with snow all winter, and to date there has been no formation of ice in the field.

### Silage

Grass silage was made from fields that showed an abundant growth of Reed Canary Grass and Red Clover. Both a tower silo and a horizontal silo were used. During the winter months very little freezing was experienced in the horizontal silo which was exposed to the weather. This silo was not "capped" and only the top three inches were unusable. The silage from both silos was of excellent quality and proved very palatable to the cattle.

### Haying

Haying operations were late because of a cold wet Spring and slow growth. Approximately 170 tons of hay were baled. The yield was good and although the summer was dry, a very good hay harvest was experienced.

### Harvesting

Cutting the grain on the forty acres was commenced during the first week in September, and a good crop was realized considering the late seeding. During haying

and harvesting, casual laborers were engaged to help the Farm Foreman and his two helpers. One of the farm helpers was employed from April until October, and at present there are two permanent men on the farm.

### Pasture Management

Pastures in early Spring were given an application of Ammonium Nitrate and 4-24-12 fertilizers. This proved very effective in maintaining a lush growth during the grazing season. A pasture rotation was maintained on 3 ten acre fields with a herd of twenty-four head and eighteen calves. Another forty acre pasture field carried twenty-four head and twenty calves.

### Weed Spraying

The spraying equipment arrived in July and although this was rather late in the season, some spraying was done with good results. Spray compounds used were MCP 80, Amino Triazole, and Dowpon. The two latter compounds were used in the spraying of ditch bottoms where there was an abundant growth of grasses and cattails.

### Drainage

Drainage is very much a problem as the land is low and flat; after heavy rains, water remains on the fields for some time. There are two open ditches running through the farm which carry off much water. Two cross ditches were dug last year, and two others cleaned which helped a great deal in the removal of surface water. Poor drainage has presented a problem with all farm operations.

### Live Stock

The herd of forty-six Hereford cows was divided into two groups, twenty-three cows, purchased in Ontario, were placed in one group and twenty-three purchased in Saskatchewan, in another group.

The cattle were put on pasture during the last week in May. The two bulls arrived the first of June and after a rest period of one week were placed on pasture with the cows.

Of the forty-six cows, thirty-eight nursed calves while on pasture, four lost their calves to malpresentation or weak calves, and the remaining four were not in calf. The thirty-eight calves consisted of twenty bulls and eighteen heifers.

Birth weights and weanings weights were taken and recorded on all calves. The older bull calves were castrated before going to pasture and the remainder were castrated in the Fall at weaning time.

The steer calves were trucked to Guelph in December to be placed on feeding trials. The heifer calves were stabled in a loose housing area and fed hay and grass silage. They were also fed some grain consisting of home grown oats and 32% concentrate mixed at a 3:1 ratio. These calves have done exceptionally well and have come through the winter without any set backs.

The cows were in good flesh throughout the summer and although nursing calves any loss of weight was not apparent.



During the last week in October, the cattle were kept in yards around the buildings and stabled the last week of November. Forty-four cows dehorned during the middle of December which has made working with these cattle easier and safer.

The cattle were sprayed three times with methoxychlor during the winter months. This proved very effective in maintaining lice control. Both cows and calves had free access to cobalt iodized salt and mineral.

The cows were fed hay and grass silage through the winter months and crushed oats being fed from the first of March. These cattle have wintered well and are in good flesh.

BRANCHES OF THE  
ONTARIO DEPARTMENT  
OF AGRICULTURE





## *Agricultural and Horticultural Societies Branch*

The administration of the Agricultural Societies Act, the Horticultural Societies Act and the Community Centres Act is the responsibility of this Branch. The office of the Director is also the headquarters for the Ontario Plowmen's Association, the Ontario Horticultural Association and the Ontario Association of Agricultural Societies. Leadership is given in planning Fairs and Agricultural Society activities, also Horticultural projects and Plowing Matches, including the International Plowing Match.

### FAIRS

Some 246 of Ontario's 260 Agricultural Societies held Fairs in 1957. Of those reporting 70% had an increase in exhibitors and 66% had higher gate receipts than a year ago. Weather was on the whole satisfactory and interest generally was well maintained. Only 15 Societies applied for and received Wet Weather Grants. This is the lowest number reporting a loss because of rain in several years.

### Fair Classification

On basis of the classification as contained in the regulations there are 8 "A" Fairs, 34 "B" Fairs and 204 "C" Fairs.

Congratulations are extended to Welland which moved up from "B" to "A" Class and Brigiden and Woodbridge from "C" to "B." To qualify for "A" a society must have paid out in prizes on specified classes \$6,000.00 for each of three years and to get from "C" to "B" the amount is \$3,000.00.

Over 100 Societies have now passed the century mark of continuous operation. The following marked their 100th anniversary by building a gateway or pylon, the cost of which was supported by \$1,000.00 centennial grant — Brampton, Brighton, Teeswater, Belmont, Lindsay, Strathroy, Beamsville, Beachburg, Thorndale.

### 4-H CLUBS

Whole hearted co-operation was given by Fair Boards to Agricultural Representatives and other extension workers in support of 4-H Club projects. Under the direction of the Extension Branch 1,211 clubs with a membership of 11,321 were organized and 65% were sponsored by Agricultural Societies. About one half of those organized were Calf Club projects. In practically all instances where a society acted as the sponsor, achievement day was held at the fair.

### Social Activities

Banquets, dances and card parties were among the social activities carried on during the year. Over 60 Societies held one or more events of this nature and found the effort worthwhile. Many gave recognition to their Junior 4H Club members by having them attend as special guests.

### Breed Shows

Societies sponsored 100 breed shows at which 8,304 cattle were shown, also 8 championship shows.

### Commercial Feature Exhibits

Many farm products were shown through the medium of commercial displays. The cost was shared by the Department of Agriculture to the extent of 50%.

Over 100 Societies took advantage of the grant to help stimulate interest in a special product common to the area. The list included dairy produce, vegetables, grain, fruit, honey, hay, tobacco, turnips, potatoes, eggs, poultry, wool, bacon hogs, market cattle and market lambs.

### Bacon Hog Special

The T. Eaton Company again provided \$50.00 in cash prizes to societies for pens of 4 hogs owned and fed by an exhibitor for a period of 90 days preceding the fair. A total of 749 pens were exhibited. To qualify a society had to have a minimum of 10 pens.

Judging was done on the rail and five prizes offered at each fair. Of the 320 prize winning carcasses grading reports showed a little over 83% graded A. In case of Chatsworth, Lucknow, Ilderton, Orangeville, Port Perry, Shelburne and Stratford all of the carcasses in the first five pens graded A.

### Canada Packers Special

Baking Contests encouraged by these specials were a tremendous success with 237 fairs out of 247 participating. By reports received from fall fair secretaries it is estimated that there was an average of 14.8 entries per contest.

### Women's Institutes Displays

This has become a most important section of the Home Department and the interest is growing. Many societies had displays in their fairs and in most instances they were judged and prizes offered.

Maxville reports 40 displays, Barrie 15, Halton 14, Brampton and Caledonia 13 each, Bolton, Durham and Orangeville 12 each, while Belleville, Listowel and Shelburne had 11.

### Improvement

A great deal of work was done by Fair Boards in the matter of enlarging their accommodations. Some 48 new buildings were erected which is a record for any year. In addition 28 did painting, 25 built new fences, 14 installed extra hydro facilities, 18 extended or renovated present buildings, 2 purchased additional land and 4 planted trees and shrubs. The new Queen Elizabeth Building at the C.N.E. and the McIlroy Memorial Building at the C.C.E., Ottawa, are worthy of special mention. Both were in readiness for the 1957 show.

### Field Crop Competitions

There was a slight increase in the number of competitions conducted as indicated by the following table:

	1952	1953	1954	1955	1956	1957
No. of Competitions .....	212	243	252	258	259	272
No. of Competitors .....	2,903	3,361	3,549	3,536	3,818	4,244

Seed and Sheaf Competition — C.N.E.

<i>Zone</i>	<i>Award</i>	<i>Class 338 Grain and Seeds</i>	<i>Class 339 Sheaf</i>
1	1	Magnetawan	Bracebridge
	2		Magnetawan
2	1	Carp	Uxbridge
	2	Campbellford	Durham
	3	Perth	Mildmay
3	1	Mildmay	Ripley
	2	Caledonia	Caledonia
	3	Ilderton	Georgetown

GOVERNMENT GRANTS

The maximum provided under the Agricultural Societies Act in prize money to any society is \$1,000.00. The factor was 30.45 as compared to 26.7 a year ago. This is multiplied by the average amount of prize money paid out during the past three years. Therefore grants received by societies in 1957 were based on 30.45% of the average paid to exhibitors for the years 1956, 1955 and 1954. Societies in territorial districts receive double grants.

<i>Amount of Grants</i>	<i>No. Paid</i>	<i>Summary of Other Grants</i>	<i>No. Paid</i>
Grants up to \$200. ....	18	Northern Ontario Special .....	49
Grants \$201. to \$400. ....	61	Field Crop Competitions .....	272
Grants \$401. to \$600. ....	51	Commercial Features .....	113
Grants \$601. to \$800. ....	29	Wet Weather .....	15
Grants \$801. to \$999. ....	20	Centenary .....	9
Maximum Grant \$1,000. ....	68	Capital Expenditure .....	184

Judges

The Department of Agriculture continued its policy of paying for services and travelling expenses of judges at fairs and for field crop competitions in Northern Ontario. The cost of judges services were deducted from the grants earned by these societies.

Association Activities

Each of the 16 districts in the province had one meeting with the exception of District 15 which comprises Kenora, Rainy River and Thunder Bay. District 10 — Grey and Bruce — held 2 meetings which is their custom. District 9 — Essex and Kent — besides holding a regular meeting arranged a picnic at the Agricultural School, Ridgerton in July.

Cochrane and Timiskaming which is District 14 formerly held a meeting in each area but they now meet jointly at Matheson with excellent results. Manitoulin and Algoma, District 12, are considering a similar plan.

A representative of this Branch attended these meetings and shared in the discussions on Fair and Society problems.

Four meetings of the board were held during the year and two of these were during the annual convention. Two meetings of the women representatives from the 16 districts were also held at convention time.



The directors of A and B Fairs section held two meetings and dealt with matters pertaining to the larger fairs and exhibitions.

The Association held its 1957 annual meeting and convention in the King Edward-Sheraton Hotel in February with 364 women and 480 men delegates in attendance. Usual separate sessions were arranged for the women, also A and B Fairs. The program consisted of addresses and panel discussion on all phases of fair work.

#### Coloured Photographic Competition

The Canadian National Exhibition offered \$500. for prizes in the photographic competition now in its fourth year. It was divided into two classes, one for A & B Fairs and the other open to C Fairs. Each class had 5 sections and societies were permitted to enter one in each. Judging was done by staff members of the Public Relations Department O.A.C., Guelph, and prizes presented during the convention. Paris won the championship in A and B Fairs Class and Drumbo in the Class for C Fairs.

#### C.N.E. Exhibit

The Association staged an exhibit of handicrafts at the C.N.E. and the articles making up the display were loaned by the Canadian Lakehead Exhibition.

#### Service Diplomas

The usual number of societies made use of diplomas supplied by the O.A.A.S. to recognize faithful service rendered their community by public spirited citizens. Presentations in most instances were made at special functions arranged by fair boards.

#### Judges School

A school for men and women judges was held for the second time at the Lakehead during the Exhibition. The Agricultural Representatives and the Home Economist from Rainy River, Kenora and Thunder Bay co-operated in carrying out the program. Very capable assistance with the entire project was given by the Lakehead Exhibition Board.

The regular judges which are supplied the Fair by the Department of Agriculture comprised the staff. Travelling expenses of those attending the school were paid by the Department.

#### CANADIAN ASSOCIATION OF FAIRS AND EXHIBITIONS

This organization of which the Ontario Association of Agricultural Societies is a member met in Toronto for their three day convention immediately following the Royal Agricultural Winter Fair.

Congratulations are extended to Evan McGugan, Manager, Western Fair, on his election as president for 1958.

#### Leaflet — "Building Better Fairs"

During the past year the leaflet — Building Better Fairs — was revised and will be found more useful not only as a guide to improved programs but as a reference with respect to government grants available to societies.

## A Salute to Women in Fair Work

Fairs are very ably supported by the women folk. At a great many the home department stands out as being the best planned and conducted section of the entire show. Not only do the women help put on the fair but raise substantial sums for the prize list and general expenses.

Paris Agricultural Society is a fine example. The ladies division raised enough money in 1956 to be able to turn over to the Board \$1,800.00 and repeated the same record for 1957. During the past year they catered to 15 banquets and other functions and with the help of the men operated a refreshment booth for 39 events.

## Societies and Government Grants

In 1907 Ontario had 349 Agricultural Societies as compared to 260 in 1957. Total grants paid by the government in 1907 were \$70,193.00 and in 1957, \$414,627.76.

## HORTICULTURAL SOCIETIES

The first Horticultural Society was organized in 1780 in Belgium. The Ontario Horticultural Association may be pardoned for taking pride in the fact that this will constitute the 104th report, and that some societies can boast well over a century of activity.

## Membership

An increase in membership was reported by 103 Societies and 117 showed an increase in expenditure. Largest memberships are:

Guelph .....	1,325	Kitchener .....	888
Waterloo .....	1,265	London .....	853
Galt .....	995	Ottawa .....	700
Orillia .....	946	Port Arthur .....	598
Barrie .....	897		

The membership for 210 societies stands at 36,935 with 40,000 the objective.

## New Societies

Nine new societies were organized during the year as follows:

City View .....	50 members	Norland .....	44 members
Dundas .....	101 members	Red Rock .....	29 members
Iron Bridge .....	42 members	Rice Lake .....	41 members
Marathon .....	75 members	Waterford .....	104 members
Oakville (White Oak) .....			200 members

Innerkip and High Park Societies have been dissolved.

## GRANTS

Appropriation for grants by the Ontario Government was increased to \$30,000.00 and was divided among 210 societies. Ten received the maximum grant of \$500.00 as follows (membership in brackets:)

Barrie .....	(869)	Guelph .....	(1,261)	Peterborough .....	(363)
Orillia .....	(776)	Kitchener .....	(814)	Wallaceburg .....	(500)
Chatham .....	(440)	Mimico .....	(233)	Waterloo .....	(1,251)
		Niagara Falls .....	(730)		

<i>Year</i>	<i>Total Grant</i>	<i>Number of Societies</i>	<i>Total Membership</i>	<i>Total Expenditure</i>
1949	\$15,000.00	188	31,568	\$115,535.96
1952	\$20,000.00	200	34,938	\$103,415.61
1954	\$25,000.00	202	36,825	\$133,548.83
1956	\$25,000.00	202	36,363	\$141,183.45
1957	\$30,000.00	210	36,935	\$131,947.86

## Diplomas and Certificates

Service Diplomas to the number of 39, were awarded by societies. These were provided and lettered by the Association, without cost to the local societies.

Some 101 Township Certificates were awarded to rural schools for ground improvement work, as recommended by the Inspectors.

## District Meetings

Meetings were held in all 16 Districts except in 10, 12 and 14. In each of these three the district director was elected by mail ballot.

In some districts such as Cochrane, Timiskaming, Nipissing, Kenora, Rainy River and Thunder Bay the distances are so great that such meetings are almost out of the question.

District No. 7 held a forum at the O.A.C. in Guelph. The latter has become one of the outstanding events of this energetic district.

## Awards

The following awards were granted by the Association:

Diploma of Merit — Mr. Albert J. Jackman, Owen Sound.  
 Mr. H. Beilhartz, Sault Ste. Marie.  
 S.S. No. 8, Minto, Wellington County.  
 S.S. No. 5, Huron, Bruce County.  
 S.S. No. 2, South Walpole, Haldimand County.  
 S.S. No. 5, Bertie, Welland County.

Trillium Pin — Mrs. Jean Gable, Barrie.

## Rural Home Beautification

One very outstanding Farmstead Improvement competition was held, in Norfolk County, with over 200 entries and prize money aggregating about \$2,400.00. This was a feature of the 1957 International Plowing Match. The results were exceptionally good and credit must go to the local committee under the leadership of the Agricultural Representative, Mr. George Bramhill.



Smithville Society conducted a successful rural home improvement competition with good leadership given by Rev. Canon Richard Haines. The society also featured civic planning, meetings, shows and expended \$677.50 in the work. A fine showing for a small society. Judging of these competitions was handled by this Branch.

### Convention

The 1957 convention had 658 register and 541 attend the banquet.

### Rural School Ground Improvement

Under the supervision of J. M. Game, Bruce County, 110 schools participated in beautification of grounds and buildings. A diploma has been awarded to S.S. No. 5 Huron Township for the fine work done on the premises.

Welland County had 47 schools participate and the winner was S.S. No. 5, Bertie.

Haldimand County continued their school ground improvement competition, the winner being S.S. No. 2, South Walpole.

Wellington North sponsored a very successful competition with 77 schools competing. The top ranking school was S.S. No. 8, Minto.

## COMPETITIONS

### WINNERS — PHOTOGRAPHIC COMPETITION

#### CLASS No. 1 — Any Garden Feature.

- 1st — Nelson Merrifield, Port Arthur.
- 2nd — Hubert Bond, York Centre.
- 3rd — A. Oke, Strathroy.

#### CLASS No. 3 — Ontario Scenery.

- 1st — H. Beadle, Guelph.
- 2nd — A. Livermore, Clinton.
- 3rd — Miss M. Prentice, South Haldimand.

#### CLASS No 2. — View of property from street.

- 1st — D. A. Rann, Brussels.
- 2nd — A. Livermore, Clinton.
- 3rd — N. Merrifield, Port Arthur.

#### CLASS No. 4 — Society Projects.

- 1st — Niagara Falls Society (5 slides)
- 2nd — Mount Albert Society (4 slides)
- 3rd — Blind River Society (5 slides)

### WINNERS — WILD FLOWER ESSAY CONTEST

- 1st — Mrs. A. Reeves, Fort William.
- 2nd — Mrs. Dorothy Denison, Oakville.
- 3rd — Mrs. M. M. Fear, Ridgeville.
- 4th — Mrs. R. W. Stephens, Brussels.
- 5th — Miss Laura D. Wakeley, Doncaster.
- 6th — C. R. Woodard, West Hill.

## PLOWING MATCHES

1957 proved to be a reasonably satisfactory year for plowing match activity. Weather was good for most of these events and the interest was well maintained. Branches co-operated with the Agricultural Representatives in conducting Coaching Classes and Junior Matches. Young people were trained in the use and adjustment of plowing equipment which is the first step toward winning a prize in a plowing match.

Encouraging reports were received from branch secretaries and from plowing associations in other parts of Canada.

### Summary of Matches and Entries with 3 Year Comparison

	1955	1956	1957		1955	1956	1957
Senior Matches .....	70	67	67	Tractors .....	1,516	1,415	1,578
Junior Matches .....	18	12	12	Horses .....	354	256	298
Coaching Days .....	38	17	15				
Home Plowing .....	3	5	4		1,870	1,671	1,876
District Matches .....	2	2	2				

Entries were higher by 12 percent as compared to 1956 and were about the same as in 1955. The trend, however, has been downward from 2,001 in 1954. As expected the number of entries in horse classes has been falling off and at present is around 18 or 19 percent of the total.

<i>High Entries</i>		<i>Prize Money</i>		<i>Membership</i>	
Peel .....	56	King & Vaughan ...	\$895.00	Oneida .....	218
East York .....	55	Waterloo Twp. ....	818.00	Blenheim .....	200
Woolwich .....	51	Welland .....	683.00	Tilbury & Romney ....	135
		Wellesley Twp. ....	600.00		

### Visitors

Attendance was good at the better organized matches and particularly those where the event was well publicized.

A total of \$20,724.00 was awarded in cash and goods by 67 Senior and 2 District Matches.

### Activities of Branches

Branches in Norfolk, Haldimand, Oxford, Elgin and Brant co-operated by furnishing a share of the prize money on local day at the International and encouraging their plowmen to take part.

The majority of the branches included a utility class in their prize list also special classes for juniors. Several had machinery displays and demonstrations put on by local dealers. Women's Institutes and church organizations assisted by providing lunches and catering to banquets for plowmen.

### Insurance

Arrangements were made with an insurance firm in Toronto for a joint policy with the Association covering public liability and property damages at a fee of \$5.00 per branch. Many branches participated and since the arrangement has proven to be practical it is expected the branches will want it continued.

### Plowing Match Judges

Through the Department of Agriculture judges were supplied for all matches and coaching days including the International. Services and travelling expenses were paid by the government. Some of the larger matches were supplied with two judges.

## INTERNATIONAL PLOWING MATCH

Norfolk County is much more familiar to the people of Ontario than it was last year owing to the fact that the International Plowing Match was held within its boundaries and drew 80,000 visitors. While not a record crowd, it was sufficient to please every one connected with the match.

The site near the town of Simcoe in Woodhouse Township proved to be satisfactory. Mike Lizon, on whose farm Tented City was located, also his neighbours, were most co-operative in supplying land for plowing and parking. The site was very convenient to hydro, water and telephone service. With the exception of one day, weather was good and while some rain occurred, it did not have much effect on the overall program.

The citizens of Norfolk County were excellent hosts and the committee they chose to look after local arrangements did a splendid job. Every committee assumed its responsibilities with the idea of putting on the best match on record. This energetic group was capably directed by Agricultural Representative George Bramhill and his Associate Roy Richards.

## Finances

As has been the custom the Local Committee received the revenue from the sale of admission tickets and parking. The charge was 50¢ per person and 50¢ per car. It was the first time a car parking charge had ever been made. No complaints were registered by motorists and it is assumed they were satisfied. Fortunately, the parking fields were close at hand and there was very little delay in getting in and out of the area.

## Prize List

Two issues were put out during the year, spring and fall, the first in the form of a leaflet giving rules and regulations, classes and extent of prizes. The other was the final booklet identified as the Official Program and Prize List which included announcements, classes, special prizes, welding competitions, donors etc. It contained 45 classes in plowing, 12 classes in farm welding and two horse shows.

## Entries

Days	Horse	Plowing		Welding
		Tractor	Total	
October 15 .....	6	53	59	8
October 16 .....	17	137	154	32
October 17 .....	16	152	168	36
October 18 .....	16	140	156	20
Totals 1957 .....	55	482	537	96
Totals 1956 .....	111	487	598	66
Totals 1955 .....	47	564	611	86
Totals 1954 .....	130	739	869	81
Totals 1953 .....	106	582	688	75

## Exhibitors and Caterers

Tented City was changed from a 3 street to a 4 street plan. It was found necessary to do this in order to fit it into the field set aside for such purpose. It



made the setup more compact and many were heard to comment they liked the arrangement. The over all length was 1,100 feet and the width 900 feet. The amount of frontage sold was down a little from the previous year.

### Official Opening

It was a privilege again to have the Honourable W. A. Goodfellow open the match following a complimentary luncheon at noon on the first day. The official party, led by the Simcoe Collegiate Band, was taken through the streets of Tented City on tractor drawn wagons immediately preceding the opening. Guests included Norfolk County Councillors, Woodhouse Township officials, County Wardens, Mayors, Members of Parliament and representatives of local plowmen's associations and the Canadian Council of Plowing Associations.

### Local Day

Competition was open only to plowmen in Norfolk and neighbouring counties of Haldimand, Oxford, Elgin and Brant. Entries totalled 59 and the prize money \$2,075.00.

### Inter-County Competition

Each team of 2 boys represented a county or district. There were 19 entries. Contestants were required to plow two lands, one of which permitted no handling of the furrows. The total scores for both classes were used in determining the winners. York County had the high team and won the British American Oil Company trip to a Canadian province. Carl Timbers, R.R. 4, Stouffville and Ross Kennedy, R.R. 2, Markham, were the team members. Their coach was Agricultural Representative W. M. Cockburn, Newmarket. Roy Richards, Associate Agricultural Representative for Norfolk County, will accompany the York team to the West Coast in July. Stops will be made at the Calgary Stampede and Banff. Expenses will be paid by the B.A. Oil Company.

### Inter-Secondary School Competition

This class which is supported by Canada Packers Ltd., was first introduced in 1952 and has been popular with a great many schools, some of which have never failed to have an entry. For the third time in succession it was won by a team from Brampton High School. Team members were Bob Armstrong and Alex. H. McKinney. There were 14 teams entered and very creditable work was done despite the fact weather was wet and soil conditions not very satisfactory. Mr. Norman Davies and his associates in the Department of Education have been most co-operative in connection with this class. The same may be said of principals, agricultural teachers and school boards.

### Esso Championship Classes

During the past year the 1956 Esso Winners, Karl Watson of Forest and Grant Wells of Stouffville, with Malen Wilkins, Jarvis, trip-manager, visited the province of Quebec at the expense of Imperial Oil Limited. While there they competed in plowing matches and visited many interesting places.

Only winners of Esso specials in horse and tractor plowing at Branch Matches are eligible to compete in these Esso Championship Classes at the International. The 1957 winners were Earl Bacher, R.R. 3, Cayuga, tractor plowman and Ivan Bell, R.R. 2, Kirkfield, horse plowman. Plans are under way by Imperial Oil

officials for these young men, along with Ken Bawden, President-elect, to visit British Columbia next April and while there participate in the Chilliwack Plowing Match.

### Ontario Championship Class

This class was established in 1953, the year in which the first match of the World Plowing Organization was held at Cobourg in conjunction with the International. Its purpose remains the same—to choose two plowmen to represent Ontario in the Canadian Championship Class. The class of 19 entries was won by Joe Tran, R.R. 2, Claremont, with Bob Timbers, R.R. 3, Mount Albert, in 2nd place. As usual contestants were required to plow two lands under World Plowing Match rules. The winners qualified for the Canadian Class the following day.

### Canadian Championship Class

Seven provinces had entries making a total of 14 plowmen. These included British Columbia, Manitoba, Ontario, Quebec, New Brunswick, Prince Edward Island and Nova Scotia. Two lands were plowed—sod and stubble—and rules for World Match Plowing were followed. A panel of judges was appointed by the Canadian Council under whose auspices this class was conducted.

On basis of total score on the two lands plowed Joe Tran was placed first and Robert Timbers second. Because of the rule by the Canadian Council whereby no province could have more than one representative on the team qualifying for entry in the World Match, Robert Timbers was replaced by Alan Hammond, Lachute, Quebec, who had won third place.

Messrs. Tran and Hammond will take part as the Canadian Team in the World Match at Stuttgart, West Germany, next October. They will be accompanied by Gordon McGavin, Walton, as trip manager.

### Visitors' Classes

A class for plowmen residing outside the province was sponsored on each of two days. Fifteen entered on Wednesday and thirteen on Friday. The same prize money, namely \$280.00, was awarded in each. Howard Ogilvie, Wallace, Nova Scotia, did the best for the visitors on Wednesday and J. T. Trimble, Portage la Prairie, held the lead on Friday.

### Welding Competition

This contest was capably handled by Prof. Jas. Scott, O.A.C., Guelph, and the judging was done by Ralph Stickney, Toronto, through the courtesy of the Canadian Welding Bureau. Entries were well above those of a year ago. A new class open to farmers who had attended a night class in welding under the direction of the Department of Agriculture was added. This took the form of a Welding Demonstration by teams of two.

The Championship in Oxy-Acetylene Welding was won by Mike Meneroski, R.R. 3, Simcoe and in Arc Welding by Marshall Ritchie, R.R. 2, Paris.

### Demonstrations

During the spring the Norfolk Department of Agriculture laid down a number of demonstrations close to the site for the visitors to see. These comprised weed control in the corn crop, comparison of varieties and application of fertilizer.

Visitors were able to view a planned farm established by the Soils Department, O.A.C., Guelph and a farm pond constructed by Big Creek Conservation Authority. Tree planting and crop dusting were also included in the program of demonstrations during the period of the match.

### Banquet

The town of Simcoe was host to a most delightful prize presentation banquet and entertainment program in the Main Exhibits Building of the Norfolk County Fair on the last night of the Match. Guests included plowmen, coaches, donors, municipal officials, committee members, O.P.A. directors and government representatives. Guest speaker was the Hon. Jas. Allan, Minister of Highways.

### Daily Program

The Family Herald, Montreal, again provided a special type of service throughout the entire match by printing and distributing daily programs covering plowing events, location of classes, prize winners, demonstrations and announcements.

### Public Address System

Hallidays Ltd., Burlington, were on the job again with their sound equipment and mobile stage in readiness to take care of any requirements.

### Telephones

Local and long distance telephone connections were arranged by Bell Telephone Company. Representatives were on hand early and their workmen had the system operating well in advance of the match. It is a service which everyone appreciates particularly when it is realized there is much expense involved on the part of the company in making it available.

### Hydro

Without the availability of hydro it would be impossible to operate a satisfactory machinery and farm equipment display at the match therefore it is always gratifying to have such fine co-operation of the Ontario Hydro-Electric Power Commission. Through the local area office the poles, lines and transformers were installed in readiness for the event. Excellent service was also given throughout the match itself.

### Provincial Police

A full staff of provincial police officers under the leadership of Inspector I. R. Robbie to take care of traffic and policing of Tented City was again provided. Their kindly interest in the event, and their desire to be of service at all times, made the operating of the match most pleasant.

### Administration Building

Through the courtesy of Pierson Buildings Ltd., Peterborough, we were again supplied with a very suitable building to house our Administrative Offices.

### Wagon Tours

The Norfolk County Junior Farmers arranged transportation throughout the plowing match area by means of wagon tours. Their efforts were especially appreciated in view of the fact the fields available for plowing contests were located



much further away than usual from Tented City. Very few visitors would have seen plowmen in action if such tours had not been planned.

### Farmstead Improvement Competition

The Ontario Plowmen's Association was able to assist by way of a grant of \$500.00 to prize list of the Norfolk Farmstead Improvement Competition. Local sponsors included the County Federation of Agriculture, Township Federations and Women's Institutes. The Ontario Paint, Varnish and Lacquer Association also paid a grant equal to that of the O.P.A. There were over 200 entries. Championship winners were Mrs. Karl Weslan, R.R. 3, Simcoe and P. E. Sowden, R.R. 2, Simcoe.

### WORLD PLOWING MATCH

A number of plowing match supporters from Ontario were able to attend this year's World Plowing Match at Peebles, Ohio, in September and see Hugh Baird and Stanley Willis, our Canadian plowmen, in action, also the part being played by Harvey Hawkey, trip manager, and Alex. McKinney, Canada's representative on the World Plowing Organization.

The match was held as a feature of Ohio's Conservation Exposition. Canada made a splendid showing when one considers the keen competition and the fact the competition involved champions from 13 other countries. Willis placed 10th and Baird 11th.

The unveiling of the Cairn of Peace was observed with pride particularly Canada's contribution to the structure of a slab of granite stone quarried in Quebec. In this connection we wish to acknowledge the kindness of the late Thomas Pride, Exeter, who supplied the stone for this cairn, also the one built at Shillingford, England, at the site of the 1956 Match.

### Canadian Council of Plowing Associations

Officers appointed at the annual meeting held at Simcoe during the International.

<i>President</i> .....	ALEX. MCKINNEY .....	Brampton
<i>Vice-President</i> .....	ED. HUDEK .....	Winnipeg
<i>Secretary</i> .....	F. A. LASHLEY .....	Toronto
<i>Treasurer</i> .....	CLARK YOUNG .....	Unionville

#### Directors

P. E. Island .....	ELLIOTT ROBERTSON .....	Chilliwack
New Brunswick .....	BILL DURANT .....	Pownal
Nova Scotia .....	A. B. BANKS .....	Sussex
Quebec .....	J. A. LAFORTUNE .....	Truro
Manitoba .....	ED. HUDEK .....	Montreal
British Columbia .....	S. SWANSON .....	Winnipeg

### Invitations from Counties

The 1958 International will be held at Crysler, October 7th to 10th, in co-operation with the citizens of the United Counties of Dundas, Stormont and Glengarry.

An invitation has been accepted from the County of Wentworth for the International to be held on the Hannah Farm, Dundas, in 1959 and from Elgin County to hold the match in the vicinity of St. Thomas in 1960.

## GRANTS UNDER THE COMMUNITY CENTRES ACT—APRIL 1, 1957 TO MARCH 31, 1958

<i>Halls</i>		
<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Sydenham Twp. ....	Bognor .....	\$ 2,375.00
Sydenham Twp. ....	Bognor, Old Hall Burned 7/57 .....	2,982.00
Watt Twp. ....	Raymond .....	78.00
North Dorchester Twp. ....	Avon .....	385.00
Thurlow Twp. ....	Parkdale .....	2,255.00
Brantford .....	Grandview .....	1,340.00
Huron Twp. ....	Reid's Corners .....	301.00
Sunnidale Twp. ....	New Lowell .....	2,500.00
Innisfil Twp. ....	Churchill .....	340.00
Ottawa .....	Laroche Park .....	5,000.00
Ottawa .....	Lindenlea Park .....	5,000.00
Ottawa .....	Sandy Hill Park .....	5,000.00
Ottawa .....	Westboro Kiwanis Park .....	5,000.00
Elma Twp. ....	Atwood .....	1,050.00
Monteagle and Herschel Twp. ....	Greenview .....	230.00
Fullarton Twp. ....	Russeldale .....	240.00
Merrickville .....	Merrickville .....	185.00
Tehkummah Twp. ....	South Bay Mouth .....	335.00
Evanturel Twp. ....	Heaslip .....	230.00
Dorion Imp. Dist. ....	Dorion .....	345.00
Port Sydney .....	Port Sydney .....	2,190.00
Wainfleet Twp. ....	Wainfleet .....	3,470.00
Sherborne .....	Dorset .....	530.00
Euphemia Twp. ....	Florence .....	3,000.00
Oshawa .....	Thornton's Corners .....	275.00
Markdale .....	Markdale .....	5,000.00
Howich Twp. ....	Wroxeter .....	160.00
Euphrasia Twp. ....	Rocklyn .....	255.00
Scarborough Twp. ....	Regent Park .....	4,375.00
McCrosan and Tovell Twp. ....	Bergland .....	1,125.00
Reach Twp. ....	Utica .....	2,000.00
Morson Twp. ....	Morson .....	720.00
Day and Bright Additional Twp. ....	Sowerby .....	200.00
Glanford Twp. ....	Mt. Hope .....	2,205.00
Osprey Twp. ....	Feversham .....	870.00
Eton-Rugby .....	Eton-Rugby (N. Ont. Vote) .....	1,806.00
Twp. of Orillia .....	Washago .....	2,145.00
Chatham .....	Kinsmen Auditorium .....	5,000.00
Total — 37 .....		\$70,497.00

<i>Fields</i>		
<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Bayham Twp. ....	Straffordville .....	\$ 1,060.00
Fonthill .....	Fonthill .....	679.00
North Dorchester Twp. ....	Avon .....	75.00
Lucknow .....	Victoria Park .....	675.00
Elma Twp. ....	Atwood .....	1,910.00
Merrickville .....	Merrickville .....	155.00
Eramosa Twp. ....	Eden Mills .....	440.00
East Flamborough Twp. ....	Hidden Valley Park .....	5,000.00
Grimsby South Twp. ....	Smithville .....	250.00
Wellesley Twp. ....	Linwood .....	40.00
Richmond Hill .....	Richmond Hill .....	1,280.00
Dresden .....	Dresden .....	510.00
Twp. of Minto .....	Teviotdale .....	375.00

Westminster Twp. ....	Jarvis and Trowbridge Park Area .....	100.00
Westminster Twp. ....	Kensall Park .....	185.00
Caledonia .....	Caledonia .....	1,400.00
Essa Twp. ....	Angus .....	80.00
Ajax .....	Ajax .....	1,050.00
Dundas .....	Little League Ball Park .....	2,810.00
Owen Sound .....	Harrison Park .....	1,250.00
Owen Sound .....	St. George Park .....	825.00
Sioux Lookout .....	Sioux Lookout .....	825.00
Arnprior .....	Arnprior .....	2,880.00
Imp. Dist. of McGarry .....	Virginiatown .....	3,500.00
Rayside Twp. ....	Rayside .....	2,425.00
East Flamborough Twp. ....	Aldershot (Townsend Park) .....	1,370.00
Rainy River .....	Rainy River .....	3,650.00
Joint Twp. Ops and Mariposa .....	Ops and Mariposa .....	1,595.00
Sudbury .....	Antwerp .....	3,380.00
Sudbury .....	Byng .....	3,585.00
Sudbury .....	Elm West .....	3,675.00
Sudbury .....	Kingsway .....	3,665.00
Sudbury .....	O'Connor .....	5,000.00
Sudbury .....	Riverside .....	4,465.00
Euphrasia Twp. ....	Walters Falls .....	285.00
Wellesley Twp. ....	St. Clements .....	110.00
Chatham .....	Moose Park .....	5,000.00
Chatham .....	McKeough Park .....	5,000.00
Chatham .....	Rotary Ball Park (Kiwanis Stadium) .....	5,000.00
Total — 39 .....		\$75,559.00

*Out-Door Rinks*

<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Oshawa .....	North Oshawa .....	\$ 5,000.00
St. Catharines .....	St. Catharines (Lion's Club) .....	1,765.00
Twp. Montegale and Herschel .....	Maynooth .....	15.00
Willowdale .....	Mitchell Field .....	5,000.00
Willowdale .....	Leadbury Park .....	5,000.00
Willowdale .....	Downsview School .....	5,000.00
Willowdale .....	Harrison Road School .....	5,000.00
Scarborough Twp. ....	Agincourt Park .....	5,000.00
Scarborough Twp. ....	Heron Park .....	5,000.00
Denbigh, Abinger and Ashby Twp. ....	Denbigh .....	105.00
Mountain Twp. ....	South Mountain .....	295.00
Orillia Twp. ....	Washago .....	345.00
Rayside Twp. ....	Rayside .....	680.00
Plantagenet North Twp. ....	Treadwell (S.S. #1-15 S.S.) .....	715.00
Total — 14 .....		\$38,920.00

*Arenas*

<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Sullivan Twp. ....	Desboro .....	\$ 2,500.00
Stanley Twp. ....	Bayfield .....	485.00
Oil Springs .....	Oil Spring .....	2,530.00
Watford .....	Watford .....	5,000.00
Essex .....	Essex Memorial Arena .....	5,000.00
Kirkland Lake .....	Kirkland Lake .....	2,650.00



<i>Arenas</i>		
<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
New Toronto .....	Lakeshore Lion's Memorial ..	5,000.00
Lion's Head .....	Lion's Head .....	5,000.00
Drayton .....	Drayton .....	345.00
Chatham .....	Chatham Memorial Arena ..	5,000.00
Total — 10 .....		\$33,510.00

<i>Arena and Hall</i>		
<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Orangeville .....	Orangeville .....	\$10,000.00
Oshawa .....	Children's Centre .....	10,000.00
Riverside .....	Riverside .....	10,000.00
Trenton .....	Trenton .....	10,000.00
Hensall .....	Hensall .....	5,000.00
Englehart .....	Englehart .....	8,730.00
Elma Twp. ....	Monkton .....	6,220.00
Wallace Twp. ....	Kurtzville .....	9,400.00
North Bay .....	North Bay .....	10,000.00
Total — 9 .....		\$79,350.00

<i>Pools</i>		
<i>Municipality</i>	<i>Centre</i>	<i>Amount</i>
Ottawa .....	Champagne Pool .....	\$ 5,000.00
Ottawa .....	Plant Pool .....	5,000.00
Powassan .....	Powassan .....	855.00
East Flamborough Twp. ....	Hidden Valley Park .....	5,000.00
Scarborough Twp. ....	Agincourt Park .....	5,000.00
Scarborough Twp. ....	Heron Park .....	5,000.00
Newmarket .....	Newmarket .....	5,000.00
Markham .....	Markham .....	5,000.00
Rockland .....	Rockland .....	3,270.00
Clinton .....	Clinton .....	2,500.00
Owen Sound .....	Harrison Park .....	3,800.00
Kirkland Lake .....	Kirkland Lake .....	2,255.00
Imp. Dist. of Cardiff .....	Cardiff .....	1,775.00
Georgetown .....	Georgetown .....	5,000.00
Total — 14 .....		\$54,455.00

Total Paid in Grants — Halls .....	\$ 70,497.00
Arenas and Halls .....	79,350.00
Arenas .....	33,510.00
Fields .....	75,559.00
Rinks (Outdoor) .....	38,920.00
Pools .....	54,455.00
Total .....	\$352,291.00

## *Extension Branch*

### FOREWORD

The Extension Branch of the Ontario Department of Agriculture includes five Services — the Agricultural Representative Service, the Home Economics Service, the Agricultural Engineering Extension Service, the Fruit and Vegetable Extension Service and the Tobacco Extension Service.

Each Service has a director and the work of all the Services is administered and co-ordinated by the Director of Extension.

The Agricultural Representative Service celebrated its 50th Anniversary in 1957 and it is the largest of the Extension Services maintaining offices in each County and District in the Province of Ontario. The personnel is composed of 54 Agricultural Representatives, 9 Associate Agricultural Representatives, 20 Assistant Agricultural Representatives and a secretarial staff of 61.

The Home Economics Service maintains a staff of Home Economists and Specialists working in every County and District of Ontario.

The Fruit and Vegetable Extension Service with a staff of 9 specialists provides services in the main fruit and vegetable growing areas.

The Agricultural Engineering Extension Service with a staff of 16 specialists offers services on drainage, farm machinery and buildings.

The Tobacco Extension Service was recently established with two specialists to do extension work in the tobacco growing areas of the Province.

### AGRICULTURAL REPRESENTATIVE SERVICE

The Agricultural Representative Service carried out the different policies of the Ontario Department of Agriculture. In addition the members helped meet the needs of the farm family with programs and projects designed to provide a more satisfactory economic and social life in rural Ontario.

There was a gradual economic improvement in Agriculture due to the favorable seeding and growing conditions in 1957. In most sections of the Province a better than average crop was harvested in good condition. Higher beef and hog prices toward the end of the fiscal year also had an effect on the gross income of the farmers. The continued increase in production costs has created a larger demand on the Agricultural Representative for better farm business management practices. To meet the demand, the Agricultural Representative in most areas, provided special courses in Farm Business Management. Thirty-seven farm management associations are now organized in the Province with 853 members. During the year, 6,078 farm account books were distributed and 483 farm accounts were analyzed. Agricultural Representatives are also performing an individual service for farmers who request a business analysis of their farm, but are not members of a farm business association.

### Extension Work in Live Stock Improvement

The live stock improvement policies of the Department of Agriculture and live stock breeders' clubs require a considerable amount of the Agricultural Representative's time.

During the year the animal contagious diseases regulations were amended for the eradication of brucellosis.

Petitions were received from 16 counties applying to become Brucellosis Control Areas. Applications were approved for Oxford, Prince Edward, Stormont, Dundas and Glengarry Counties and the animals are being tested. Under the new regulations animals which are positive to the test are marked for identification in a manner approved by the Veterinary General and immediately consigned for slaughter. The Agricultural Representative organized meetings to familiarize farmers with these regulations and was also responsible for having the petitions signed and forwarded to the Minister.

Artificial insemination continued to expand across the Province and the Agricultural Representative assisted the local organization in maintaining this service. Five more sub-stations were organized in 1957.

Fifty-eight Dairy Herd Improvement Associations were active in 1957 and the Agricultural Representative served to co-ordinate this program and the figures obtained permitted a good number of the members to have a complete analysis of their farm operations.

The Agricultural Representative is concerned with the promotion of policies adopted by the Department of Agriculture with regard to all classes of live stock and assist the various live stock breeders' clubs with their programs. The Agricultural Representative or his assistant, served as secretary or treasurer for 65 clubs and assisted in the program of the 227 organized clubs. There were 110 county breed shows and in addition 56 clubs had consignment sales of breeding stock. Three feeder cattle sales were held and prices obtained were very satisfactory.

The bull loaning policy is providing assistance to farmers in providing sires of high quality especially in Northern Ontario. The number of associations was reduced during the year but as there are 73 organizations and in most cases the Agricultural Representative assisted in this program.

Hog producers' associations are organized in almost all the counties and the Agricultural Representative held special meetings to discuss swine marketing and carcass quality. A total of 110 boar clubs are active in 28 counties.

The warble fly control program is active in 232 townships and the Agricultural Representative assists the administration of this policy.

A large part of the poultry work is carried out by the staff at the Ontario Agricultural College. Poultry meetings were held in 20 counties with special speakers to discuss recent developments in feeding and management of poultry flocks.

### Extension Work in Soil and Crop Improvement

In every County or District the Agricultural Representative is secretary-treasurer of the Soil and Crop Improvement Association and is responsible in a large measure for its direction.

A total of 2,438 demonstration and test plots were reported. These are designed to encourage the use of better varieties and fertilizer according to location and soil tests. The Agricultural Representative received 8,253 soil sample reports



and these recommendations are assessed and the information passed on to other farmers. Pasture mixtures and management methods are important projects in every area.

Some 229 hall meetings were held and 97 field meetings to discuss better farm practices. Field tours were also organized to observe the results on different types of soil.

Drainage demonstrations were held on 42 farms to focus attention on proper tile drainage, surface drainage and outlets and tours were organized to see the results of the work done in previous years. Most of these demonstrations were held in Eastern Ontario in co-operation with the municipal councils.

Farm ponds are increasing every year and the Agricultural Representatives estimated there were 7,461 ponds being used for water supply for cattle or fire prevention.

Thirty-Eight County Seed Fairs were held with the Agricultural Representative acting as manager.

#### Assistance to Northern Ontario

The various policies to promote the development of Agriculture in Northern Ontario are under the supervision of the Agricultural Representative. The most important is the clearing and breaking of land suitable for agricultural purposes. The Agricultural Representative is responsible for the inspection of the land and upon approval subsidies are paid. A land use survey was made in the Cochrane area in order to promote the development of better land and discourage land clearing in areas not as well suited to Agriculture.

The following Summary indicates the extent of Northern Ontario assistance during the fiscal year.

County or District	No. of Farmers Assisted	Acres Cleared	Acres Broken	Subsidy Paid		Total Subsidy Granted	No. Wells	Total Subsidy for Wells
				Clearing	Breaking			
Algoma	27	176	197	1,890.00	1,056.00	2,946.00	6	1,030.20
Cochrane North	341	1,942	1,873	23,198.01	11,241.51	34,439.52	16	2,943.89
Cochrane South	91	566	609	6,762.51	3,655.50	10,418.01	9	2,492.33
Kenora	14	96	96	1,147.50	576.00	1,723.50	1	294.48
Manitoulin	21	171	179	2,042.00	1,074.00	3,116.00	2	371.77
Muskoka & Parry Sound	20	100	79	1,200.00	474.00	1,674.00	5	720.86
Nipissing	87	600	577	7,206.00	3,465.00	10,671.00	29	7,329.82
Rainy River	85	611	491	7,332.00	3,006.00	10,338.00	12	2,098.63
Sudbury	43	230	235	2,766.00	1,404.00	4,170.00	10	2,050.19
Temiskaming	264	2,482	2,482	29,724.00	14,862.00	44,586.00	14	3,739.69
Thunder Bay	83	606	611	7,266.00	3,644.99	10,910.99	21	3,613.70
Total	1,076	7,583	7,431	\$90,534.02	\$44,459.00	\$134,993.02	125	\$26,685.56

#### Service Clubs

The Agricultural Representative works closely with service clubs in promoting and encouraging 4-H Clubs. Some 171 service clubs contributed \$17,432.34 as prize money or scholarships. A large number of 4-H Clubs were also entertained at banquets or tours. Most of the Agricultural Representatives are members of the various service clubs and are chairman or members of the Agricultural Committee.

#### School Fairs

School fairs have remained popular in some sections of the Province and the Agricultural Representatives reported 96 school fairs with 705 schools participating.

The main duties of the Agricultural Representative were judging some classes on the fair day and co-operating with the teachers and school boards on planning the program.

#### Plowing Matches

A total of 59 senior matches and 14 junior matches were held in 37 counties. The Agricultural Representative co-operated in several counties by organizing machinery displays or drainage demonstrations in conjunction with these matches.

#### Rural Community Night Schools

Rural Community Night Schools were held in 27 counties sponsored jointly by the Department of Agriculture and the Department of Education. The Agricultural Representative is a member of the Rural Community Night School and assists in locating suitable teachers for the agricultural subjects.

#### Extension Work Through Press, Radio and Television

Many of the Agricultural Representatives contribute a column to the county weekly papers and 3,828 press releases were supplied to weekly and daily papers.

Radio broadcasts on a weekly, or bi-monthly basis are also conducted and 2,205 broadcasts were presented by the Agricultural Representatives or assistants.

Extension personnel also presented or assisted with 137 telecasts.

#### Courses for Extension Personnel

Two one week courses in Extension Education were held for 40 staff members of the Branch.

Topics included on the program were "Development of Ideas and Communication"—"Program Planning and Evaluation"—"The Agricultural Representative Looks at His Job"—"Leadership Principles and Practice".

During the course workshop assignments were given each member and reports were prepared on several subjects.

#### 4-H CLUB PROGRAM

In 1957, a total of 22,823 young people were enrolled in this program in Ontario. Each of these young people, who range in age from 12 to 20 years, carried on an active project located on the home farm. The Agricultural Representative Service takes the chief responsibility for the direction and management of 4-H Agricultural Club Work in Ontario, and pays one-third of the prize money to the Club members. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service. Following is a summary of the 4-H Clubs organized in 1957:

<i>Agricultural Clubs</i>	<i>No. Clubs</i>	<i>Membership</i>
4-H Calf Clubs .....	313	5,675
4-H Swine Clubs .....	46	600
4-H Sheep Clubs .....	3	41
4-H Poultry Clubs .....	21	350
4-H Grain Clubs .....	98	1,585
4-H Field Crop Clubs .....	14	241
4-H Potato Clubs .....	70	1,176
4-H Corn Clubs .....	26	403

4-H Tractor Clubs .....	45	655
4-H Forestry Clubs .....	32	667
Miscellaneous 4-H Clubs .....	8	109

676                      11,502

#### *Homemaking Clubs*

4-H Clothing Clubs .....	310	2,927
4-H Food Clubs .....	307	2,902
4-H Garden Clubs .....	180	1,597
4-H Housefurnishing Clubs .....	165	1,458
4-H Hospitality Clubs .....	96	882
4-H Defence Clubs .....	153	1,555

1,211                      11,321

1,887                      22,823

### Voluntary Leadership

With the ever-increasing membership in 4-H Club Work in Ontario, the work of the Voluntary Club Leader in assisting the Agricultural Representative has become increasingly important. Last year there were about 1,094 Leaders working on a voluntary basis in the various counties, assisting in many ways in the promotion of Club Work.

In many of the counties, the work of the Club Leaders is co-ordinated by a Club Leaders' Council. The Department of Agriculture provides an opportunity for Club Leaders to meet in the various counties to plan programs and to evaluate the results of the work being carried on. A special short course for 4-H Club Leaders is provided during Short Course Week at the Ontario Agricultural College early in the New Year.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip to the Royal Agricultural Winter Fair. A complimentary trip was also provided to the Ontario Soil and Crop Improvement Association Convention for those Club Leaders who did not wish to attend the Royal Winter Fair.

### 4-H Inter-Club Competitions, New Liskeard

The fourth Annual 4-H Inter-Club Competitions were held for Northeastern Ontario, at the Demonstration Farm, New Liskeard, on October 4th, for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were 84 boys and girls in 42 teams taking part in agricultural club projects. The winners were:

<i>Project</i>	<i>Teams Competing</i>	<i>Winning Team Members</i>	<i>District</i>	<i>Coach</i>
Dairy Calf ....	14	Jean Martin, Richards Landing Bonnie Beilhartz, Bruce Station	Algoma	J. M. MacIntosh C. A. Tanner
Beef Calf .....	12	Ronald Trivers, Thessalon #2 Audrey Henson, Ophir	Algoma	C. A. Tanner C. A. Tanner
Potato .....	11	Wayne Gorman, Echo Bay #3 Clair Wilding, Sault Ste. Marie #1	Algoma	C. A. Tanner C. A. Tanner
Forestry .....	5	Robert Purbrick, Thornloe #1 Faye Whalen, New Liskeard #1	Temiskaming	M. F. Cook Don Scott, Reforestation Supervisor



### 4-H Inter-Club Competitions, Guelph

The 4-H Inter-Club Competitions for provincial honors were held at the Ontario Agricultural College, Guelph, on October 25th, 1957, with 478 boys and girls in 239 teams taking part in agricultural club projects.

<i>Project</i>	<i>Teams Com- peting</i>	<i>Winning Team Members</i>	<i>County</i>	<i>Coach</i>
Dairy Calf ....	59	John Kennedy, Oxford Centre Laing Kennedy, Oxford Centre	Oxford	R. E. Bell G. McRuer
Beef Calf .....	36	Wm. C. Robinson, Oakville #1 Lynne Coulter, Campbellville #3	Halton	J. E. Whitelock J. A. Francis
Swine .....	21	Eddy den Haan, Loretto #2 Robert Cooke, Bradford #2	S. Simcoe	J. K. McRuer J. D. McCallum
Poultry .....	7	Raymond Clow, Brockville #2 Pauline Lalonde, Brockville #2	Leeds	J. R. Ostler J. R. Steele
Grain .....	42	Murray Mellow, Bolton #1 Alex McKinney, Brampton #2	Peel	J. W. McCullough J. A. Francis
Field Crops ..	15	Bill Muir, Woodstock #3 Don Lazenby, Woodstock #7	Oxford	R. E. Bell G. McRuer
Potato .....	20	Gerald Asselstine, Burketon #3 Cameron Porter, Pontypool #1	Durham	E. A. Summers J. E. Brown
Forestry .....	9	Michael Applejohn, Perth #1 Donald McGregor, Balderson	Lanark	A. G. Grubbe H. J. Stanley
Tractor Maintenance	30	Dale Davis, Jellyby Edward Green, Lyn #2	Leeds	J. R. Ostler J. R. Steele

On Saturday, October 26th, an educational tour of the Ontario Agricultural College was provided during the morning for those contestants who wished to participate.

### Canadian Council on 4-H Clubs

This organization is set up for the primary purpose of correlating and co-ordinating the various provincial 4-H Club programs across Canada. The organization is composed of representatives from the Canada Department of Agriculture, as well as from the ten Provincial Departments of Agriculture, together with 39 industrial members and 12 Associate members who represent various national agricultural organizations.

R. G. Bennett, Associate Director of Extension in charge of 4-H Club Work in Ontario, serves as a Provincial Director on the Council.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300.00 to the Council.

### National 4-H Club Week

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

Ontario sent 14 delegates to National Club Week. Six of the delegation were selected from 4-H Homemaking Clubs and eight from 4-H Agricultural Clubs. Those selected were as follows:

*4-H Homemaking Club Delegates:*

Donna Samells, Box 234, Port Perry (Ontario)  
 Helen Burkitt, RR #2, Frankford (Hastings)  
 Eleanor Rowan, RR #1, Cavan (Durham)  
 Jean McLarty, RR #3, Ridgetown (Kent)  
 Arleen Cain, Devlin (Rainy River)  
 Patsy Spring, Wyevale (N. Simcoe)

*4-H Agricultural Club Delegates:*

Mary Campbell, RR #3, Northwood (Kent)  
 Jean Lazenby, RR #7, Woodstock (Oxford)  
 Desmond Enright, RR #4, Cobden (Renfrew)  
 George Greenlees, RR #3, Campbellville (Halton)  
 Edward Kowal, RR #2, Bowmanville (Durham)  
 Donald Pullen, RR #1, Granton (Perth)  
 Sandy Snedden, RR #3, Almonte (Lanark)  
 Ken Tamlin, RR #1, Woodville (Victoria)

## JUNIOR PROGRAMS AT CLASS "A" EXHIBITIONS

### Central Canada Exhibition, Ottawa

There were 110 teams competing on August 27th, 1957, in the General Agricultural Competition, represented by 314 Club members.

A Club Camp was held in connection with this Competition. Camp members spent a day at the Experimental Farm, were entertained at a friendship party, and taken on a sight-seeing tour around Ottawa. There were some 500 boys and girls attending this camp.

A special feature of the camp was a parade to the grandstand by counties.

### Peterborough Exhibition

A total of 95 boys and girls took part in the Junior Agricultural Program at Peterborough Exhibition, on August 7th, 1957.

The program included Live Stock Judging Competitions, an Agricultural Quiz, and an Identification and Machinery Defects Test. In the evening the juniors were guests of Canada Packers at a dinner and were guests of the Exhibition at the evening grandstand performance.

### Canadian National Exhibition, Toronto

There were 174 contestants taking part in the Live Stock Judging Competitions, 94 contestants taking part in the Fruit and Vegetable, Grain and Roots and Farm Machinery Test Competitions, and 14 in the Tractor Safe Driving Competition, on Wednesday, September 4th, 1957.

The boys and girls taking part in these competitions were provided with an evening meal, a pass to the grounds and a ticket to the evening grandstand performance through the courtesy of the Canadian National Exhibition Association.

### Western Fair, London

There were 209 boys and girls taking part in the Junior Agricultural Program at Western Fair, on September 9th, 1957.

In addition to the Live Stock Judging Competitions, the program included a conducted tour of various educational exhibits at the Fair as well as an Agricultural Identification Quiz. Each contestant was required to answer a series of questions based on what was seen during the tour of the Exhibition. The contestants were served dinner through the courtesy of the Western Fair Association and were also their guests at the evening grandstand performance.

#### INTER-COUNTY LIVE STOCK JUDGING COMPETITIONS

##### Royal Winter Fair, Toronto, November 14th, 1957

Twenty-eight teams were entered, comprised of 3 contestants per team.

JEFFREY BULL MEMORIAL TROPHY—Won by Peel County.

Winning Team Members—Keith Parkinson, Brampton #1.

James Fraser, Streetsville #3.

Clarence Rutledge, Orangeville #6.

Coaches: J. W. McCullough, Agricultural Representative.

J. A. Francis, Associate Agricultural Representative.

##### ONTARIO VETERINARY CHALLENGE TROPHIES.

*Dairy Cattle*—Won by: Ontario County.

Ronald Werry, Oshawa #1.

Robt. Holliday, Columbus #1.

Lloyd Wilson, Uxbridge #2.

*Beef Cattle*—Won by: Peel County.

Keith Parkinson, Brampton #1.

Jas. Fraser, Streetsville #3.

Clarence Rutledge, Orangeville #6.

*Swine*—Won by: Hastings County.

Harold Harris, Madoc #2.

Harry Danford, Springbrook #2.

Douglas Rollins, Plainfield.

ROBERT GRAHAM MEMORIAL TROPHY—8 entries.

Won by: Allan Grunder, Ontario Agricultural College, Guelph.

E. H. STONEHOUSE MEMORIAL TROPHY.

Won by: Lloyd Wilson, Uxbridge #2, Ontario County.

F. K. MORROW SCHOLARSHIP AWARD—25 entries.

Won by: Harry Danford, Springbrook #2, Hastings County.

*Gold Medals* were awarded to the top contestant in each of the breeds of live stock judged.

##### Ottawa Winter Fair, Ottawa, October 29th, 1957

Five counties were entered represented by 19 contestants.

OTTAWA WINTER FAIR TROPHY—Won by Lennox & Addington County.

Winning Team Members—Robert Galt, Bath #2.

Robert McCutcheon, Napanee #5.

David Oliver, Napanee #6.

Lorne VanLuvan, Napanee #7.

Coach: W. N. T. Ashton, Agricultural Representative.

*Silver Medals* were presented to top contestants in each of the breeds of live stock judged.



**INTER-AGRICULTURAL SCHOOL LIVE STOCK JUDGING COMPETITION****Royal Winter Fair, Toronto, November 14th, 1957**

This competition open to teams consisting of 4 students enrolled in the second year of a Diploma Course at an Agricultural School, College, or University.

Three teams entered, comprised of 4 contestants per team.

Won by: Ontario Agricultural College.

Winning Team Members: D. C. Brubacher.  
G. R. Maxwell.  
G. J. Powell.  
D. S. Pullen.

Coached by: G. Norrish, Department of Animal Husbandry.

**INTER-COUNTY SEED JUDGING COMPETITIONS****Ottawa Winter Fair, Ottawa, October 30th, 1957**

Six counties were entered represented by 23 contestants.

Nettleton Challenge Trophy — won by Renfrew County.

Coached by: F. Q. Dench, Agricultural Representative.

J. D. Butler, Associate Agricultural Representative.

**JUNIOR FAIRS****4-H Calf and Swine Club Championship Show, Ottawa**

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Departments of Agriculture, staged the Eastern Ontario 4-H Calf and Swine Club Championship Show during the Ottawa Winter Fair, on November 1st, 1957.

Fourteen counties from Hastings, Prince Edward and east, exhibited at this Show.

*Entries*

Holstein calves .....	313
Ayrshire calves .....	81
Jersey calves .....	49
Guernsey calves .....	28
Shorthorn calves .....	18
Hereford calves .....	33
D. P. Shorthorn calves .....	10
Baby Beef calves .....	42
Aberdeen-Angus calves .....	2
Swine .....	38

**Queen's Guineas Class, Royal Winter Fair**

Two hundred and twenty-one Club members entered baby beef calves in this class at the Royal Winter Fair, on Thursday, November 21st, 1957.

The Shorthorn steer shown by Helen Anderson, Glen Cross, Ontario, was made Grand Champion of this class and the Queen's Fifty Guineas and the Honourable T. L. Kennedy Trophy were presented by the Honourable Louis O. Breithaupt,

Lieutenant-Governor of Ontario, and Dr. C. D. Graham, Deputy Minister of Agriculture, respectively. Following is a summary of this Class:

<i>Entries</i>	
Shorthorn .....	93
Aberdeen-Angus .....	69
Hereford .....	59
Total .....	221

#### FIRST PRIZE CALF IN EACH SECTION

Shorthorn — Helen Anderson, Glen Cross.

Aberdeen-Angus — Gordon Adams, King.

Hereford — Neil McLeod, R.R. #2, Blackwater.

#### WINNER OF QUEEN'S GUINEAS — \$250.00

Helen Anderson, Glen Cross.

Weight of calf — 810 lbs.

Sale price — \$1.95 per lb.

#### RESERVE CHAMPION

Gordon Adams, King.

Weight of calf — 890 lbs.

Sale price — 50¢ per lb.

Average sale price per lb. of calves exclusive of champion and reserve champion — 26.5¢.

#### JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the program of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment," offer a program to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension personnel.

#### Junior Farmers' Association of Ontario

Some 6,345 members representing 245 Junior Farmer and Junior Institute clubs affiliated with the Provincial Association in 1957-58. Number of members declined slightly but quality remains high. The Association was heartened toward the end of the year to see renewed vigor, re-organization and new organization of local clubs in several counties and districts in Ontario. The practice inaugurated in 1956 of issuing provincial membership cards to all affiliated members was continued in 1957.

The office of Secretary-Treasurer of the Association is held by the Assistant Director of the Branch and for that reason the work of the Branch is closely associated with Junior Farmer Work throughout Ontario.

#### Projects

##### PUBLIC SPEAKING AND DEBATING

The Provincial Public Speaking Competition attracted 30 participants representing many local and county competitions throughout the Province.

The one hundred dollar educational scholarship offered by the Association to the high ranking contestant was awarded to Margaret MacLeod, Oxford County. Four contestants receiving honorable mention were Bill Boulton, Leeds County;

Sandra Doig, Huron County; Velorous Gingrich, Waterloo County; and Katherine Merry, Halton County.

Twenty-one counties made entries and competed in the preliminary round of the Provincial Debating Competition. The topics selected for this year's debates, up to and including the finals were as follows:

Rounds 1 and 2 — "Resolved that farm people are losing their independence."

Round 3 and semi-final round — "Resolved that university education should be free to all who are qualified for it."

Final Round — "Resolved that contract farming is in the best interests of the Ontario farmer."

The debating competition provides much information for the participants and audiences and also affords an excellent opportunity for training in public speaking.

### Choirs, Quartets and Trios

Eight Junior Farmer choirs participated in the choir concert held in Toronto before a large audience. This was the largest choir concert held by the Association to date. Dr. G. R. Fenwick, critic, was impressed with the quality of all choirs. Twenty-one quartets and trios participated in the quartet and trio competition in which the Ontario County mixed quartet, the Waterloo County ladies trio, and the Brant County male quartet emerged victorious.

### Leadership Training Schools

Leadership training schools received considerable attention from the officers and directors of the Association. Six successful one-day schools were held on a district basis.

These schools provide opportunities for local and county club officers to meet, exchange ideas and discuss problems.

### Conferences

The January Junior Farmer Conference in Toronto had a registration of 840. The program consisted of the Provincial Public Speaking Competition, the Quartet and Trio Competitions and the Provincial Choir Concert. There was much favorable comment on the high calibre of every part of the program.

A one-day conference was held in February at Kemptville especially for Junior Farmers in Eastern Ontario. The highlight of this program was an address by Mr. W. J. LeClair. Recently Mr. LeClair headed a Canadian delegation on a visit to Russia. The address was timely and challenging.

While no Junior Farmer Conference was held in Northern Ontario this year, the provincial president and vice-president assisted with the 4-H Conference at New Liskeard.

### Television

Interest on the part of Junior Farmers in television is increasing each year. The success of the two competitions held in 1957 created such incentive that four competitions have been completed since January 1st of this year.

Local television stations have been very generous in providing free telecasting time and much professional assistance.



Junior Farmers from 18 counties have participated in the competitions held at CFPL-TV, London; CKNX-TV, Wingham; CKVR-TV, Barrie; and CKWS-TV, Kingston.

Lambton and Dufferin counties, winners of the two competitions last year, presented their shows on "Country Calendar" over the C.B.C. network.

### Prince and Princess Competition

Junior Farmers co-operated with the Ontario Federation of Agriculture in organizing and conducting local, regional and provincial competitions to select a provincial Federation of Agriculture Prince and Princess. The ultimate winners were Jane Newman, Haldimand County, and Don McGugan, Lambton County.

### Sports

Considerable athletic talent was displayed at the four regional Field Days held at Guelph, Ridgeway, Peterborough and Kemptonville. The field days were organized by county directors in the zones concerned.

A provincial Curling Bonspiel was held at Barrie with 28 rinks participating. One mixed rink entered the bonspiel and made a very creditable showing.

### Birth Certificates

The Junior Farmers' Association of Ontario has made available to all local clubs application forms for birth certificates. This project was instigated to facilitate verification of age of competitors in all provincial competitions. However, many clubs have extended this project to include all members of the family.

### Animal Health Short Course

As a result of the Oxford County resolution requesting a Short Course in Animal Health at the Ontario Veterinary College, the Junior Farmers' Association of Ontario in co-operation with Mr. E. I. McLoughry, Director, Extension Liaison and the Ontario Veterinary College arranged a very satisfactory course.

## EXCHANGE VISITS

### International Exchange Visits

Dave Barrie, provincial president, attended the World Assembly of Youth Conference in Lebanon in August. As well as representing the Junior Farmers' Association of Ontario at this conference, he was the only Canadian to attend.

Four young people — Miss Leone Turnbull, Brant; Miss Joan Wigglesworth, Halton; Blythe Meek, Peel; and Allen Scott, Oxford, under the leadership of Mr. J. M. Purvis, Kemptonville Agricultural School, visited Great Britain and Northern Ireland.

Four Scottish, two Irish, and four English Young Farmers visited in Ontario during the 1957 summer months. These were Miss Dorothy Black, Miss Sadie Gibb, Miss Jean Horsburgh and Ronald Farquharson from Scotland; Miss Margaret Torrens and George Henry from Northern Ireland; Miss Mary Busby, Miss Iona Morris, Tony Evans and Jim Barton from England.

In addition, four young people represented the Junior Farmers' Association of Ontario at the Tri-State Conference held at Pocono Manor, Pa., in April, and the RYUSA Conference held at Jackson's Mill, W. Va., in October. These delegates

were respectively: Miss Wilma Sinclair, Halton; Miss Diane Snyder, Waterloo; Bruce McCallum, Lambton; and Floyd Krick, Lincoln; and Miss Florence Hood, Wentworth; Betty McHolm, Durham; Allan Murray, Haldimand; Arnold Banting, South Simcoe.

Orville Mussell, Carleton County, attended the Annual Meeting of the American Institute of Co-operation in Colorado in August.

#### Interprovincial Exchange Visits

Three Junior Farmers from the Province of Alberta, Mr. and Mrs. Walter Scheidt and Mr. Aubrey Marler, visited in Ontario at the time of last year's Annual Meeting and Conference and for a couple of weeks following the conference.

Miss Helen Johnston, Huron County, and Mr. Keith Richardson, Haldimand County, represented the Provincial Association on an exchange visit to the Province of Manitoba.

Miss Alta Tedford, Kent County, and Ronald Shelley, Elgin County, attended Camp Laquemac in August, 1957.

#### Provincial Leadership Training Camp

Due to favorable harvest weather last fall there was an increased attendance at the provincial leadership training camp at Geneva Park, Lake Couchiching. Seventy-five Junior Farmers received training in program planning, forestry, crafts, water safety, recreation, music and drama.

#### Soils and Land Use Tour

A three-day Junior Farmer Soils and Land Use Tour for one boy from each county and district was organized. The tour visited practical farms in Perth, Bruce, Grey and Dufferin counties and several points of interest at the Ontario Agricultural College. Thirty-six delegates participated in the tour.

#### Affiliations

The Association is affiliated with, and nominates representatives to, other farm organizations and associations in Ontario. These are:

Federated Women's Institutes of Ontario — Jean Bennett, R.R. #2, Oakville, and Audrey Dobson, Corunna.

Ontario Federation of Agriculture — Mac Sprowl, R.R. #4, Acton (director on Board of Governors); George Barrie, R.R. #7, Galt; Jim Montgomery, Shelburne; Bob Schenk, R.R. #2, Ayton; Jack Cockburn, Drumbo; Kenneth Ferguson, R.R. #7, Alvinston.

Ontario Conservation Council — Jack Cockburn, Drumbo, and Carl Boynton, Woodbridge.

Ontario Plowmen's Association — Ross Sibbick, R.R. #2, Burford, and Jack Pearson, R.R. #2, Uxbridge.

Canadian National Exhibition — Glen Corneil, R.R. #3, Omemee.

Royal Agricultural Winter Fair — Elliott Snyder, R.R. #1, Brampton; Bev. Gray, R.R. #1, Port Hope.

Provincial Rural Leadership Forum Committee — Keith Richardson, R.R. #4, Dunnville.

## OFFICE STATISTICS

## 54 Agricultural Representatives' Offices

	<i>Total</i>	<i>Average Per Office</i>
No. Letters Received .....	158,902	2,942
No. Letters Written .....	116,366	2,155
No. Circular Letters Mailed .....	758,007	14,037
No. Incoming Telephone Calls .....	124,065	2,223
No. Visitors at Office .....	123,007	2,278
No. Meetings held in Office .....	4,517	84
No. Bulletins and Reports Distributed .....	149,732	2,773
No. Kodachrome Pictures taken .....	3,151	58
No. Meetings Attended by Agricultural Representatives .....	6,305	117
No. Meetings Attended by Associate and Assistant Agricultural Representatives .....	4,291	79
No. Miles travelled by Car on Government Business by Agricultural Representatives .....	795,854	14,738
No. Miles travelled by Car on Government Business by Associate and Assistant Agricultural Representatives .....	619,215	11,465

## HOME ECONOMICS SERVICE

The objectives of the Home Economics Service are (1) to bring to the women and girls of rural Ontario a program of practical home economics education which they can apply directly in their responsibilities as home-makers, and (2) to help themselves and to develop their own leadership.

## Local Leader Training Schools

Last year the local leader method of extension work was introduced. Through the County or District Economist, a training school for local leaders and assistant leaders was set up in each county or district of the province. In some counties there were so many applications that it was necessary to have more than one school. At these schools leaders appointed by Women's Institutes or other local groups, took instruction from specialists on our staff in Food and Nutrition, Clothing, Home Furnishing, Home Crafts and Health Education, and these leaders undertook to relay the instruction they received to the women of their local groups. Each training school gave the leaders two days of intensive instruction and practice. Instructors provided the leaders with leader's manuals, bulletins and other teaching aids to guide them in presenting the work to their groups. Instructors also encouraged the leaders to use their own initiative and originality as, for example, to create new dishes by varying a basic recipe, to design their own rugs, to try different materials for lamp shades and lamp bases, to create pleasing designs and color effects in clothing and household accessories.

The enthusiastic response of the Institutes, the numbers of women participating, the standard of the work accomplished, the development of the local leaders and the general interest in plans for next year, speaks well for the effectiveness and the economy of the local leader method of extension. It is the intention to follow this method in the greater part of our program for the coming year.

At the close of the season each county or district held a Summary Day at which the women presented an exhibition of their work and a program related to it. In



some counties, because of the large area covered and the number of women participating, it was necessary to hold more than one Summary Day. Usually these events were open to the public. The instructor from Home Economics Service who had conducted the Leaders' Training School was present to offer comments and suggestions and the County or District Home Economist consulted with the women about a choice of project for the next year.

<i>Projects</i>	<i>Training Schools for Leaders</i>	<i>Groups Represented</i>	<i>Women Taking Project</i>
The Third Meal .....	23	221	3,302
Sew to Save .....	18	184	1,468
New Lamps for Old .....	11	82	445
Rug Making .....	16	143	1,384
Hints for the Home Nurse ....	9	50	628
Totals .....	77	680	7,227

### Courses and Conferences

Courses and Conferences ranging in length from one to five days were given by the field staff. The classes were mostly organized by the local Women's Institutes but were open to all the women of the community. The courses dealt with Food and Nutrition, Clothing and Textiles, Home Furnishings, Home Crafts, Health Education, Cultural Activities and Women's Institute Procedures. The accompanying tabulated summary gives the subjects of the courses in each of these sections, the number of courses and the attendance.

<i>Subject</i>	<i>Number of Courses</i>	<i>Enrolment</i>	<i>Average Attendance</i>
Choosing and Using Fabrics .....	21	345	17
Something to Wear .....	16	374	24
Children's Clothing .....	3	35	12
Dress Finishes .....	3	45	14
Dressmaking .....	9	96	9
Millinery .....	140	1,906	15
Food for the Family .....	1	16	16
Sandwiches for all Occasions .....	27	1,071	40
Your Food and Your Figure .....	3	61	20
Make the Most of Your Home Freezer ....	2	54	27
Canning Ontario's Foods .....	2	24	12
Meals and Money .....	13	324	22
Hospitality Foods .....	40	1,072	24
Salads .....	82	2,558	31
Modern Methods of Food Preservation .....	16	363	23
When Food Makes a Difference .....	13	286	22
Home Care of the Sick .....	3	125	14
An Ounce of Prevention .....	3	82	14
Medicine—Yesterday and Today .....	5	96	19
Leatherwork .....	7	72	10
Quilting—Design and Technique .....	2	33	14
Needlecraft—Color, Design and Stitches .....	8	80	9
Brighten Your Home with Color .....	26	534	21
Treasures in Your Attic .....	11	217	20
Tailored Slip Covers .....	6	48	8
Curtains and Draperies .....	9	103	12
Cultural Activities .....	20	339	17
Program Planning .....	16	178	11
What Makes a Good Officer .....	2	54	27
How to Conduct Meetings .....	8	154	20
Aids to Effective Speaking .....	26	465	18
Totals .....	543	11,212	

### Miscellaneous Meetings

Special addresses and demonstrations were given in co-operation with the Agricultural Representatives and various branches of the Department of Agriculture. Staff members gave special talks and demonstrations at Women's Institute Conventions, Conferences and Holidays and represented Home Economics Service at the 109 District Annual Meetings of the Women's Institutes of the province.

A number of radio addresses were given on Home Economics subjects and releases were prepared for the press and radio. Both County Home Economists and Specialists on the staff have taken part in television programs. A number of tape-recordings were made in co-operation with the Information Service of the Ontario Agricultural College.

### Circulars and Bulletins

Bulletins issued by the Branch are in great demand by Women's Institute members and others who get them from the office of the Agricultural Representatives. A great many requests are received from High School teachers and Medical Health Officers.

### Home and Country

Three issues of the Women's Institute paper "Home and Country" were published this year. Each issue ran to 47,000 copies and the Institutes distributed these to the members. The purpose of this publication is to encourage good programs and policies in the Institutes by publishing special news from the branches, also to keep before the Institutes the Home Economics Services available from the Branch. As the paper goes to every Branch member it provides a means of sending out good home economics information. A number of copies go to key people in other provinces.

### Mimeographing

Material to be used in courses and 4-H Homemaking Club work was mimeographed in the office as follows: Administration 18,690; Clothing 6,150; Health Education 150; Home Crafts 540; Housing 1,800; Loan Library 745; Nutrition 4,400; 4-H Homemaking Clubs 47,780.

### The Loan Library

The Loan Library is a mailing service providing source material for the programs of Women's Institutes or other organizations. It also helps women with homemaking problems. The loan material is sent upon request in the form of mounted bulletins, papers, clippings and study kits.

During the past year 15,267 folders were sent out on loan for a period of two weeks. The following classification indicates the interests: Agriculture and Canadian Industries 2,092; Citizenship and Education 2,631; Community Activities and Public Relations 1,408; Historical Research and Current Events 1,035; Home Economics and Health 3,352; Women's Institutes 1,441; Resolutions 122; articles were sent on inspirational subjects, biographies, other countries, games and contests totalling 4,186. Letters accompanied the 2,343 requests for loan literature. This was an increase of 267 over the previous year.

Loan Library study kits are designed for those Institutes or individuals who desire longer loan periods for extensive study. Three new kits were prepared making a total of twelve subjects. These relate to culture, crafts, and homemaking. Last year 319 study kits with accompanying letters were mailed. The distribution was as

follows: Felt Work 57, Millinery 72, Etched Aluminum 53, Homecraft Slides 2, Furniture Refinishing 35, Kitchen Improvement 26, Simplified Housekeeping 31, Household Linens 3, Canadian Women 11, Canadian Art and Artists 17, Conservation 6, Associated Country Women of the World 6.

Letter friend contacts were completed between 21 Ontario women and women in Australia, England, India, Ireland, New Zealand, Norway and United States of America.

Twenty-seven requests for information on Historical Records of the organization of branch Institutes were answered.

Files are kept up-to-date by addition of new material, and mending and discarding old material.

Staff members use the Loan Library for source material and have access to a wide selection of magazines.

## EXTENSION WORK WITH JUNIORS

### County and District Home Economists

Home economics extension work with girls is supervised in the field by County or District Home Economists. Twenty-two full time Home Economists were engaged in this work this year and every county or district in the province had the service, though in some areas the Home Economist had to divide her time among three or even four counties or districts.

### 4-H Homemaking Clubs

The 4-H Homemaking Club Program for girls and young women, twelve to twenty-six years of age, is planned to give training in home economics, to provide an opportunity for continuous growth and development through participation in educational programs, to encourage satisfaction in achievement and an appreciation of rural living, to develop leaders and to promote intelligent, responsible citizenship.

The County and District Home Economists direct the Homemaking Club Program in their respective territories. They conduct local leader training schools, visit clubs, hold achievement days and assume responsibility for special club programs at fairs, conventions and conferences. Over 1,600 local leaders and assistant leaders attended two day training schools, or one day for gardens and led the clubs with their eight club meetings, or four for gardens. Each County and District selected their club program from the seventeen available clubs — five in foods, five in clothing, two in house furnishings, one in hospitality, one in home defence and three in gardens. Every County and District carried on two club units during the club year. Records show an all-time high membership with a gratifying standard of work. Reports indicate that interest of senior club members was maintained in spite of busy school days and girls leaving home for further studies and work. Frequently meetings were held at week-ends when girls were home or they joined clubs in other centres where they were working. Here and there young mothers of club age continued their membership since they find club experience assists them in meeting family needs. It is gratifying to find that senior girls in clubs very often take an interest in helping junior members, thereby also helping the leaders and assisting in the work in general.

4-H Homemaking Clubs are encouraged to confine their club activities to club meetings, a visit to the local Institute and participation in Club A and B Fair programs for senior members. This seems wise since both leaders, and members who are mainly students at school have demands on their time and other opportunities for various social affairs. Some counties sponsor one educational trip a year during Easter or Summer holidays.



<i>Units</i>	<i>Training Schools for Leaders</i>	<i>Number of Clubs</i>	<i>Number of Members</i>
Food and Nutrition Clubs .....	36	308	2,919
Clothing Clubs .....	37	305	2,915
Housefurnishing Clubs .....	15	165	1,383
Hospitality Clubs .....	10	95	882
4-H Home Garden Clubs .....	26	183	1,575
Home Defense Clubs .....	15	152	1,562
	139	1,208	11,236

### Local Leaders Recognized

Arrangements were made and programs planned for experienced local leaders of 4-H Homemaking Clubs to visit the Royal Winter Fair as guests of the Ontario Department of Agriculture. While over 480 leaders were eligible, having led two clubs during 1956 and 1957 and not having had two previous trips, only 228 were able to take advantage of trips because of home responsibilities.

Luncheons were arranged for one day of the training school for 2,083 leaders.

### Juniors at Fairs

Some 520 club members took part in the 4-H Homemaking Club program at Central Canada and Canadian National Exhibitions, Western and Peterborough Fairs.

At Central Canada, members live in club camps and follow a two-day program. At the Canadian National Exhibition they have a three-day program and are given accommodation for two nights at a University Women's Residence. Suitable living accommodation, an auditorium for judging, demonstrations and exhibits and a well planned program for members make these inter-county days, held before school starts in September, a happy and worthwhile experience for senior club members.

At Stratford, Belleville, Owen Sound and Teeswater, similar one-day programs were featured with 258 individuals taking part. Fifty-one educational exhibits were shown by Junior Institutes and Farm Girls' Clubs at such fairs as Galt, Brampton, Kingston, Markham, Milton, Ridgetown and Caledonia. Many local fairs had classes for some phase of 4-H Homemaking Club work with individual and club exhibits as well as special sections for young women in Junior Institutes and Junior Farmer Associations. In all cases these exhibits were arranged in co-operation with County or District Home Economists.

### Pins, Certificates and Spoons

County Honor pins and certificates were presented to 304 members who completed six 4-H Homemaking Club units. Provincial Honor Certificates and pins were awarded to 104 members who completed twelve units.

National 4-H Council certificates were presented to 56 local leaders completing five years as club leader.

A 4-H Homemaking Club sterling silver spoon was presented to each leader and member who had completed their work satisfactorily.

### National Week and Provincial Girls' Conference

Six senior members were selected from Durham, Hastings, Kent, Ontario, South Simcoe and Rainy River 4-H Homemaking Clubs to represent Ontario at the National Club Week.

The Fourth Provincial Girls' Conference for 4-H Homemaking Club members was held at the Ontario Agricultural College in June. Every county and district was represented by 188 experienced club members who were selected to attend. Travelling expenses to the conference were paid by the Department. The conference theme was: "Youth is the Opportunity to Do Something and To Become Somebody".

### Junior Institutes

Junior Institutes, Farm Girls' Clubs and rural young women associated with the Junior Farmers' Association continued to co-operate with Women's Institutes and Junior Farmers in planning and carrying on programs concerned with home and family life, agriculture, community living and citizenship. They gave leadership in sponsoring 4-H Homemaking Clubs and with Junior Farmers held Field Days, Sunday Services, Choral Classes, Debates, Public Speaking, Farm and Home Safety Projects and a Provincial Leadership Training Camp. They attended Junior Farmer Conferences in Toronto, Kemptville, Guelph and five one-day leadership training schools.

Eighty-five program kits were used by various groups in preparing monthly programs. Some clubs have used film strips on Family Living available from Home Economics Service.

### Scholarships

Experienced club members received various Women's Institute Scholarships which gave them financial assistance for some educational purpose — The Dorothy Fitcher Ontario Women's Institute Scholarship, The Ontario Women's Institute Scholarship and a considerable number of county and district scholarships. The number of county and district Women's Institute scholarships is steadily increasing.

### Exchange Visits

Members entertained in their homes overseas visitors from the Scottish Association of Young Farmers' Clubs and the National Federation of Young Farmers' Clubs of England and Wales. Two Provincial Honor girls who are active members of the Junior Farmer-Junior Institute organization were included in the party of four Ontario Juniors given the Ontario Government trip to Great Britain.

Delegates were sent to the R.Y.U.S.A. (Rural Youth of the United States of America) Conferences in West Virginia and Pennsylvania and to conferences in the province of Manitoba and at Camp Laquemac.

### Staff

The Home Economics Service staff consists of 49 members. The head office staff includes the Director, 5 Supervisors, 17 Home Economists and Field Assistants and 5 clerical staff. There are 22 County and District Home Economists.

### Federated Women's Institutes of Ontario

The Extension Branch, Home Economics Service works closely with the Federated Women's Institutes of Ontario and the Director sits on the Provincial Board as an honorary member. At the annual meeting of the Federated Women's Institutes of Ontario Provincial Board, Mrs. James Haggerty, Napanee, was again elected President and Mrs. G. Gordon Maynard, Unionville was again elected Secretary.

The establishment of an F.W.I.O. office, in February, in the same building as the Home Economics Service headquarters, makes it convenient for the Director to work with the provincial executive in matters involving extension service and at the same time to have the business of the organization carried on by its own staff in its own office.

The Federated Women's Institutes of Ontario held conventions in 13 areas of the province last year with a total attendance of 3,885; an annual Officers' Conference at Guelph attended by nearly 850 women; and 200 at the Women's Institute Holidays at Guelph and Kemptville. Staff members assisted with the conference and holiday programs.

The Federated Women's Institutes of Ontario had a tent at the International Ploughing Match in Norfolk County and a booth at the Royal Winter Fair.

### Branches and Membership

Number of Senior Women's Institutes in Ontario, March 31, 1958	1,424
Number of Junior Women's Institutes in Ontario, March 31, 1958	51
Total number of Women's Institutes in Ontario, March 31, 1958	1,475
Membership, March 31, 1958	46,100

Institutes organized during the year — 12

Institutes disbanded during the year — 19

Of the Institutes organized 11 were Senior and 1 was a Junior.

Of the Institutes disbanded 12 were Senior and 7 were Junior.

### The newly-organized Institutes were:

Bruce South	Lisburn, Silver Lake
Carleton East	Greely-Manotick Station
Kent West	McKay's Corners
Rainy River East	Miscampbell
Simcoe East	Hamshire-Ardrea, Pinewood, West Ward
	Evening
Stormont	Ingleside
Sudbury	Lebel
Thunder Bay	Slate River
York East	Buttonville

### The Institutes which disbanded were:

Algoma East	Royal
Algoma North Shore	MacLennan (Sunnyside)
Bruce East	Mildmay Junior
Bruce South	Tiverton Junior
Durham West	Tyrone
Elgin East	Port Stanley
Hastings North	Beltistos, Madoc Junior
Hastings West	Sidney Junior
Huron West	Colwanash Junior
Middlesex East	Lambeth Junior
Middlesex North	Lucan Junior
Peel South	Malton
Stormont	Aultsville, Farran's Point, Wales
Temiskaming South	Englehart
Welland	Quarryville
York East	Malvern

### Legislative Grants

To districts \$4,316.00; to convention areas \$540.00. Total \$4,856.00.



## AGRICULTURAL ENGINEERING EXTENSION SERVICE

Several factors are contributing to an increasing public demand for more agricultural engineering services. Ontario farms are continuing to become more mechanized and specialized.

Hog units, both feeding and farrowing, are increasing in size. The trend toward larger operations in dairy and beef enterprises continues. Change in poultry production is more marked than in other fields of meat production.

The demand for advice and plans for new housing units to meet individual requirements and for the remodelling of existing buildings is increasing in all territories. The importance of the efficient use of labor is emphasized by the many requests for advice on this subject.

It is becoming difficult for farmers to buy more land close to their present holdings with the result that they are draining low lying fields to improve productive capacity. To a large extent, this accounts for the increase in requests for drainage surveys.

Work with 4-H Tractor Clubs was continued. This work has great value in teaching young people the safe operation of farm machinery. When the Engineering Extension Specialist is at the farm, other farm engineering problems are discussed with the owner and operator of the farm.

Permanent staff now totals sixteen. Ten summer assistants have been acquired as of May 1, 1953, for the summer months. Their duties will consist entirely of drainage surveying, as assistants to the Engineering Extension Specialists in their respective territories.

### Summary of Extension Services

#### *Drainage*

Total calls .....	647
Number of acres systematically surveyed .....	18,480
Number of feet of profile surveyed .....	158,420
Number of feet of open ditch surveyed .....	41,260
Number of preliminary surveys .....	121
Number of advisory surveys .....	91
Number of inspections .....	41
Number of applications on file .....	940

Although approximately the same acreage was surveyed as during the previous year, the applications on file have increased by 250 and further applications are still being received. However, the additional summer assistance should materially reduce the backlog.

A total of \$700,400.00 was borrowed through the townships under the Tile Drainage Act by the farmers. This is the largest amount to date and exceeds the loans of the previous year by \$25,800.00.

#### *Pond Surveys*

Dams designed .....	60
Dugout ponds designed .....	118
Applications on file .....	204

Requests for this service have shown a slight increase.

**Buildings**

Stabling and buildings remodelled .....	476
Ventilation calls .....	98
Building and ventilation applications on file .....	293

The number of requests for advice on new buildings and remodelling old structures has shown a marked increase.

Many farmers have revised their normal programs to include loose housing of hogs on a large scale. Several new pole structures have been built, and a large number of old barns have been modified to suit this system. The previous method of handling one litter per pen is rapidly being superseded by the system of feeding 40 to 70 feeder hogs per pen, using self-feeders and water bowls. Some of these installations are operated on a contract feeding basis by which the local feed merchant supplies the weanling hogs and the feed and pays the farmer \$1.00 per head per month as his share for supplying the housing, management, and labor. Several variations of this system are being practiced.

**4-H Tractor Maintenance Clubs**

Thirty clubs were organized and instructed throughout the club year, with a good attendance and completion. Demonstrations were conducted by some clubs.

**Extension Talks**

Approximately 150 farm group meetings were addressed by the Agricultural Engineering Extension Specialists throughout the year, in addition to 4-H Club meetings. A number of radio talks, telecasts, and press releases were made by members of the staff.

**Correspondence and Visitors**

Approximately 4,000 letters were answered by the various offices and over 1,100 visitors sought advice.

**Blueprinting Service**

Approximately 150 blueprints were made for local commercial firms before this service was discontinued in April, 1957.

The Service made 9,390 blueprints and ozalids (whiteprints) for its own use and the Ontario Agricultural College. College prints are mainly from the Department of Engineering Science and either were made in the development of the Canadian Farm Building Plan Service or are produced for extension use.

**THE FRUIT AND VEGETABLE EXTENSION SERVICE**

The Fruit and Vegetable Extension Service continued to give assistance and expand its services to fruit and vegetable growers during 1957-58. The Service maintains a staff of Extension Specialists located in fruit and vegetable growing areas in the Province. The Extension Specialists are trained to offer specialized assistance to growers on problems affecting the production and marketing of fruits and vegetables as well as bring to these producers the results of research by means of demonstrations and organized meetings.

**General Crop Conditions**

The spring of 1957 will be remembered as one with an abundance of moisture. However, July and August were for the most part quite dry and the fruit and vegetable crops suffered to some degree. The growing season opened early in April

with high temperatures which caused fruit buds to open quite rapidly. Vegetable growers took advantage of the fine weather to plant the early vegetable crops. By the middle of May when fruit crops were in bloom some severe frosts coupled with cool weather reduced the fruit set to a large degree on sour cherries and pears. Other fruit crops, namely, peaches, sweet cherries and apples, set reasonably well.

The strawberry crop was reduced to some extent in all producing areas. While frost was mainly responsible for reduced yields in the Niagara District, there was a severe reduction in crop in Norfolk County, caused mainly by the inability of strawberry plants to withstand the winter.

The pea crop was much above average both for quality and quantity. The damp, cool conditions during May and June were ideal for growth, and the heavy yield taxed the facilities of the processors.

Vegetable crops on the organic soils yielded well. However, the lettuce crop was seriously reduced because of the very heavy infestation of *Aster yellows*. This virus disease was spread from field to field by a species of leafhopper which was present in large numbers. Continuous spraying and dusting on the whole had little effect on the control of the insect.

The fruit crops were harvested and marketed in a normal manner. There were some losses to Elberta peaches caused by brown rot. This situation was of considerable concern to the Fresh Peach Growers' Co-Operative. The apple crop went into storages in fair condition. In some apple growing districts fruit tended to be somewhat large and of poor color. Extreme care had to be exercised in selecting fruit for controlled atmosphere storage. This new method of storing apples is increasing each year. The capacities of these storages have doubled over the past year so that at present there are facilities for storage in excess of 200,000 bushels of apples. Consumer reaction to high quality apples from controlled atmosphere storages during spring months indicates there will be increased construction of these storages in the future. Proper care in the production, handling and storage will ensure a high quality product being offered to the consumer which in turn should give a fair return to those producing apples.

### The Orchard Spray Service

The successful production of fruits and vegetables necessitates proper control of the various pests which attack these crops. In order to assist the grower in the identification and methods for control of the various pests, timely letters are prepared in the Extension Specialists' offices and forwarded to growers. This service requires that the Extension Specialist must be constantly alert as to the proper time to control the pests and notify the growers accordingly.

### Tree Fruit Census

The Tree Fruit Census commenced in 1956-57 was completed during the year and the results published. Of interest is the fact that there are about 1,000 more apple trees now than in 1951 when the last census was completed. During the past four years there has been increasing interest in the planting of apple trees using dwarfing root stocks. The census figure for dwarf apple stock shows there are over 73,000 of these trees. The largest plantings tend to be in areas where land values are high.

### Demonstration Work in Fruits and Vegetables

It is the duty of the Extension Specialist to pass along the results of research to agricultural producers. This is achieved in part by the use of demonstration plots on



growers' farms where the results may be observed. Projects on farms included improved cultural practices, weed control, variety testing, pruning, control of insects and diseases and promotion of the use of virus-free strawberries.

#### **Farm Business Management**

Fruit and vegetable growers are showing an increasing interest in endeavoring to lower the cost of production. To achieve this, a farm account book adapted for their use has been prepared. In order that the Extension specialist become familiar with the procedures necessary to analyse these books, a three-day course for Extension Specialists on Farm Business Management was held at Vineland in February, 1958.

#### **Leaf Analysis Service**

The Horticultural Experiment Station at Vineland will, in 1958, offer a leaf analysis to growers of apples, peaches and grapes. The Fruit and Vegetable Extension Service will co-operate by collecting samples of leaves and fees as well as make fertilizer recommendations.

#### **Marketing of Fruits and Vegetables**

The marketing of fruits and vegetables is requiring more attention each year. Various marketing groups and individuals are asking for assistance in the promotion of better packing, storage, crop estimating and endeavors to expand markets. During the year, one Extension Specialist, along with an interested group, visited strawberry producing areas in California to study all phases of the industry. The information brought back by this group has led to a considerable stimulation of the industry in the Province.

#### **4-H Club Work**

Increased assistance is being given to the younger members of the farm families through the 4-H Club program. Extension Specialists take an active interest in the five Grape Clubs in the Niagara Peninsula as well as the Potato Clubs throughout the Province. In the Midland and Meaford districts work is under way in the formation of a 4-H Strawberry and Apple Club.

#### **Press, Radio and Television**

The local weekly and daily newspapers provide an excellent medium to promote many educational activities as well as provide space for announcements of programs, meetings, etc. Specialists prepared 95 press releases during the year.

Radio stations in local areas are most co-operative in giving free time for the extending of information. Broadcasts are made on a daily, weekly and monthly basis. Radio tapes are prepared monthly on horticultural subjects for the Ontario Radio Tape Service. Extension Specialists participated in 136 radio broadcasts during the year.

With most farm homes having television receivers, much use is being made of this medium. The programs must of necessity be prepared for both rural and urban audiences and much time is required in preparation. The staff participated in 4 television programs during the year.

#### **Miscellaneous Activities**

In the highly concentrated fruit producing area of the Niagara Peninsula it has been felt that there could be an increase in educational programs at the grower level. During the year, in co-operation with the Niagara Peninsula Fruit and Vegetable Growers' Association, several meetings were organized at local centres when many

phases of production were discussed. The popularity of these meetings was evidenced by the large attendance and interest in the discussions.

In March, plans were formulated for the organization of an Eight Thousand Quart Strawberry Club in Ontario. This club, the aim of which is to stimulate interest in strawberry production, is sponsored by the Berry Growers' Marketing Board. The Fruit and Vegetable Extension Service is co-operating in the project.

### TOBACCO EXTENSION SERVICE

The Tobacco Extension Service recently organized as a Service under the Extension Branch, continued to render assistance to tobacco producers by way of advice, demonstration plots, press releases, radio and educational meetings. The Tobacco Extension Specialists, through the co-operation of the Canada Department of Agriculture, operate from the Tobacco Sub-Station at Delhi which provides office facilities. The co-operation extended to the Tobacco Extension Specialists by the Canada Department of Agriculture Research Officers is appreciated.

### Crop Conditions

The 1957 flue-cured tobacco crop, in the main producing areas, received above normal rainfall particularly in June. Under the high moisture conditions in the early growth period, plants tended to develop shallow root systems and this, coupled with the leaching out of considerable nitrogen, caused a substantial yield reduction on many farms. The greatest loss from the high rainfall occurred on the lighter tobacco soils where the crops ripened prematurely producing a small, thin type of leaf. Many farms on medium and heavy textured tobacco soils actually benefited from the extreme precipitation as the crop ripened in time to avoid frost damage with the result tobacco cured out much brighter than usual.

In the greenhouse, seedlings developed rapidly despite a slow start and the abundance of cool, wet, cloudy weather. A few fields of tobacco were planted as early as May 16, but, as usual, most of the planting began in the last week of May. Planting was delayed on a few farms because of poor drainage accompanied by excess rainfall at planting time.

In general the crop started off well and looked quite promising until the week of June 24 when almost 4" of rainfall was recorded at the Delhi Tobacco Substation. After this many crops became uneven and acquired a yellowish cast denoting a deficiency of nitrogen. Side-dressing to correct this deficiency was common as late as the second and third weeks of July. Many farmers in desperation tried foliar feeding but this was of little or no benefit. A period of dry weather in late July seemed to help many crops although it brought out the irrigation systems on several farms. The Alliston and Port Hope areas had a very dry July and two or three irrigations were necessary on most farms in these areas.

The only serious hail storm occurred on August 3 when approximately 15,000 acres of tobacco in an area north of, and including, Delhi and east to Port Dover was involved. About 750 acres of tobacco were completely destroyed in this storm.

An unusually large number of troubles were encountered in growing the 1957 tobacco crop. This is reflected in the numerous inquiries about greenhouse problems, side-dressing, foliage feeding, weather fleck and many more which were dealt with by the Tobacco Extension Service.

### Marketing

The year brought a climax to several years of agitation by many tobacco growers who were dissatisfied with the marketing system of their crop. A vote of tobacco growers on May 21st indicated a majority of growers as being in favor of an auction place. Auction warehouses were constructed at Tillsonburg, Delhi and Aylmer and auctioning commenced on December 10th, December 18th and December 27th respectively.

Sales of tobacco during December tended to be very sluggish. However, by the middle of January sales advanced tremendously with as high as two and a half million pounds moving in one day. By March 31st a large proportion of the crop had been sold and it was anticipated that the whole crop would be out of the growers hands by the middle of April.

### General Tobacco Extension Work

A large proportion of the time of the Tobacco Extension Specialist is taken up in answering enquiries concerning the numerous problems involved in the production of tobacco. This is evidenced in the fact that during the year some 940 tobacco growers visited the Extension Specialists on matters concerning tobacco production.

The Tobacco Extension Specialists also provide articles for the press release as well as make use of radio as a means to further the extension program.

### Demonstrational Projects

In order that results of research be made known to the tobacco grower in a practical way or to test production methods in fringe tobacco growing areas, the use is made of demonstrational plots.

During the year two demonstration plots were planted in the Port Hope-Alliston areas. The plot at Port Hope was divided into two sections: one on light soil and the other on a somewhat heavier soil. The plots had six varieties as well as six fertilizer treatments. About the first of August twilight meetings were held at the plots so that the tobacco growers could observe the results of the demonstration.

### Research Projects

The Tobacco Extension Service co-operated with research personnel on committees investigating weather fleck, insecticide injury to tobacco, soil fumigation investigations, insects as disease carriers, and the relation of irrigation to insects and diseases.



## *Co-operation and Markets Branch*

The activities of the Branch are devoted to administering the regulations approved under The Farm Products Marketing Act, The Co-operative Loans Act and The Farm Products Containers Act. In addition the Commissioner of Marketing is Chairman of the Ontario Food Terminal Board administering The Ontario Food Terminal Act.

### THE FARM PRODUCTS MARKETING ACT

The highlights of the year were the approval of the flue-cured tobacco growers' marketing plan and the wheat producers' marketing plan.

During the year the growers of flue-cured tobacco petitioned the Board that a vote be taken on a proposed marketing plan prepared by a Provisional Committee of Growers. The vote sought by the Provisional Committee was brought about in part by a recommendation in a report by the Restrictive Trade Practices Commission of the Canada Department of Justice. This report dealt with the production, purchase and sale of flue-cured tobacco in Ontario and indicated, in the Commission's opinion, that certain features of the operation of the Ontario Flue-Cured Tobacco Marketing Association were regarded as discriminatory. The Board approved the application for the vote when the number petitioning substantially exceeded 10% of those estimated to have grown this crop in 1956 and arranged for a vote to be taken on the question on April 1st. Prior to the taking of the vote considerable controversy and misunderstanding arose among the growers as to the issues involved. Constitutional charges on the legality of the proposed marketing plan were also raised. As a result and following representations by the Provisional Committee the Board announced the vote would be postponed to permit further study of all the matters involved. The vote was subsequently taken on May 21st, 1957 with the following result:

Total Eligible to Vote .....	3,511
Total Vote Cast .....	3,324
No. "Yes" Votes .....	2,219
No. "No" Votes .....	1,105
No. "Spoiled" Ballots .....	14

Since the number voting in favor exceeded 60% of the total number voting and the number voting in favor exceeded 51% of the total number eligible to vote the Board recommended the plan to the Minister for approval which was granted on June 20th, 1957.

From time to time commencing in 1950 in Kent County and spreading to Middlesex, Elgin and Huron Counties and then developed on a Provincial basis, various groups of producers proposed that a marketing plan be set up for the handling of Ontario wheat. Fundamentally the desire seemed to spring from the fact that the price of Ontario wheat was often subject to wide fluctuations and the producers felt, particularly those who depended upon wheat for a cash crop, that the operation of a marketing board would tend towards a more uniform price throughout the year. During 1954 a petition of some 7,000 names of wheat producers requesting a vote on a proposed marketing plan was submitted to the Board. The Board took no action on the petition, however, as an undue proportion of the names

thereon came from one county in the Province and because the petitioners were not in agreement as to the type of marketing plan; i.e., negotiating type or single sales agency type, that the producers generally preferred.

During 1957 agreement was reached among the producers and with the elevator, feed manufacturers and milling companies on a negotiating or collective bargaining type wheat marketing plan. At the same time the petition of the producers submitted in 1954 was revised by the deletion of the names of all petitioners who had since passed away or had sold their farms and was supplemented in the case of all counties having in excess of 15,000 acres producing wheat as per the 1951 census by signatures representing not less than 10% of the number of wheat producers in such counties. As a result the Board approved the application and arranged for a vote to be taken on the question of favor of the plan on January 17th, 1958. The result of the vote was as follows:

Total Eligible to Vote .....	18,416
Total Vote Cast .....	11,832
No. "Yes" Votes .....	10,329
No. "No" Votes .....	1,463
No. "Spoiled" Ballots .....	40

Since the number voting in favor exceeded 60% of the total number voting and the number voting in favor exceeded 51% of the total number eligible to vote, the Board recommended the plan to the Minister for approval which was granted on March 13th, 1958.

#### Plans in Force

As a result there are now seventeen plans in force covering twenty-nine crops. The plans in operation and the year each was approved are as follows:

- The Ontario Asparagus Growers' Marketing Plan, 1938
- The Ontario Pear, Plum and Cherry Growers' Marketing Plan, 1938
- The Ontario Peach Growers' Marketing Plan, 1938
- The Ontario Sugar-Beet Growers' Marketing Plan, 1942
- The Ontario Seed-Corn Growers' Marketing Plan, 1942
- The Ontario Berry Growers' Marketing Plan, 1944
- The Ontario Bean Growers' Marketing Plan, 1944
- The Ontario Vegetable Growers' Marketing Plan, 1946
- The Ontario Hog Producers' Marketing Plan, 1946
- The Ontario Grape Growers' Marketing Plan, 1947
- The Ontario Soya-Bean Growers' Marketing Plan, 1949
- The Ontario Winter-Celery Growers' Marketing Plan, 1949
- The Ontario Honey Producers' Marketing Plan, 1950
- The Ontario Fresh-Peach Growers' Marketing Plan, 1954
- The Essex-Kent Sett Onion Growers' Marketing Plan, 1954
- The Ontario Flue-Cured Tobacco Growers' Marketing Plan, 1957, and
- The Ontario Wheat Producers' Marketing Plan, 1958.

Each of these plans is administered by a local board elected by the producers. All price agreements, orders and directions of each local board are filed with the Ontario Farm Products Marketing Board appointed under The Farm Products Marketing Act.

The functions of the Farm Products Marketing Board which administers the regulations approved under The Farm Products Marketing Act are threefold. Firstly it receives requests from groups of producers seeking the approval of marketing plans and if a group represents 15% of the producers affected by the proposed plan the Board shall investigate and consider the purposes of the plan. Secondly if the Board is satisfied a proposed plan will promote the more efficient marketing of the farm

product or class or portion thereof it arranges for a plebiscite to be taken of the producers of the farm product or class or portion thereof on the question of favor of the plan. Thirdly if the required percentage of the producers vote in favor of the proposed plan then the Board exercises general supervision over the operation of the plan, on approval, to the extent the powers delegated to the producer board administering the plan are not exceeded.

A brief comment on the working of each plan during the year under review will illustrate the scope of the marketing activity involved.

## 1. The Asparagus Plan

Some 800 growers sell asparagus annually to the canners in Ontario for processing. Only the processing industry is regulated, i.e., asparagus sold on the fresh vegetable market is exempt from the plan. After minimum prices and conditions of sale have been negotiated by the industry a marketing agency appointed by the growers' local board sells all the asparagus purchased for processing, each growing district being allotted its share of the tonnage sold. An unique feature of this plan is an agreement by the growers to cease cutting when total orders have been filled. In this way production is fitted to demand.

In 1957, 1,840 tons of asparagus were sold for processing at a total value of \$732,553.00. This compares with 1,632 tons valued at \$710,515.00 for processing in 1956.

Asparagus minimum prices in 1957 compared with 1956 were:

	1957		1956
Grade No. 1 .....	29¢ per lb.	Grade No. 1 .....	29¢ per lb.
Utility Grade A .....	22¢ per lb.	Utility Grade A .....	22¢ per lb.
Utility Grade B .....	16¢ per lb.	Utility Grade B .....	15¢ per lb.
Grade No. 2 .....	7¢ per lb.	Grade No. 2 .....	7¢ per lb.

## 2. The Pear, Plum and Cherry Plan

Some 2,200 growers sold 7,414 tons of sour cherries valued at \$1,525,819.00; 777 tons of sweet cherries valued at \$182,992.00; 2,784 tons of plums and prunes valued at \$169,462.00; 2,224 tons of Bartlett pears valued at \$258,878.00 and 5,945 tons of Kieffer pears valued at \$331,701.00 or a total of 19,144 tons valued at \$2,468,852.00 sold for processing in 1957.

This compares with 3,983 tons of sour cherries valued at \$738,654.00; 357 tons of sweet cherries valued at \$90,686.00; 1,915 tons of plums and prunes valued at \$120,978.00; 5,434 tons of Bartlett pears valued at \$589,792.00 and 7,437 tons of Kieffer pears valued at \$408,285.00 or a total of 19,126 tons valued at \$1,948,395.00 sold for processing in 1956.

Cherry, plum and pear minimum prices in 1957 compared with 1956 were:

	1957		1956
Sour cherries .....	\$205. per ton		\$185. per ton
Sweet cherries			
White and similar varieties	220. " "		240. " "
Black and similar varieties	240. " "		260. " "
Plums			
Damson variety .....	70. " "		67. " "
Jam types .....	54. " "		57. " "
Prunes .....	70. " "		67. " "
Bartlett pears 2" and up .....	117.50 " "		110. " "
Bartlett pears 1¾" to 2" .....	75. " "		70. " "



	1957	1956
Kieffer pears 2½" and up prior to November 3rd -----	55. " "	50. " "
after November 3rd -----	60. " "	55. " "
Pears, other than Bartlett or Kieffer varieties -----	75. " "	70. " "

### 3. The Peach Plan

Some 1,450 growers sold 30,027 tons of peaches valued at \$2,883,092.00 for processing in 1957. This compares with 17,180 tons of peaches valued at \$1,756,592.00 sold for processing in 1956.

Peach minimum prices in 1957 compared with 1956 were:

	1957	1956
Jubilee -----	\$ 97.50 per ton	\$105. per ton
Elbertas -----	100. " "	110. " "
"V" type and other varieties ----	82.50 " "	90. " "

### 4. The Sugar Beet Plan

In 1957 some 1,950 growers delivered 265,342 tons of sugar beets produced from 19,737 acres. This compares with 144,653 tons of sugar beets produced from 14,158 acres by 1,587 growers in 1956. Average yield per acre in 1957 was 13.44 tons compared to 10.22 tons in 1956. Total value of beets to the growers was up at \$3,781,123.50 in 1957 allowing for supplementary payments still to be made compared to \$2,081,925.16 in 1956. Average sugar content in 1957 was 16.08% compared to 17.9% in 1956. Average estimated price delivered plant to the grower was 14.25 (at June 1st) in 1957 compared to 15.24 per ton paid in 1956. Sugar beets came under the shelter of The Agricultural Prices Support Act (Canada) in 1957 when a floor price of \$13.00 per ton for 17% sugar content beets delivered factory was established. As the price paid exceeded the floor price there will be no deficiency payment due to the grower.

### 5. The Seed-Corn Plan

The membership of this marketing group is comprised of some 275 hybrid and open-pollinated corn growers in south-western Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel average for the three months, December, January and February in each year. The base price for the 1957 crop was \$1.24 per bu., 14.5% moisture, and for the 1956 crop was \$1.32 per bu., 14.5% moisture.

In 1957, 350,000 bushels approximately of hybrid corn for seed and 35,000 bushels approximately of open-pollinated corn for seed were produced compared with 320,000 bushels of hybrid corn for seed and 35,000 bushels of open-pollinated corn for seed produced in 1956.

The minimum prices for hybrid corn for seed and for open-pollinated corn for seed in 1956 compared with those in 1955 were:

### Hybrid Corn for Seed

SCHEDULES A, B, C, D	1957	1956
	<i>The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:</i>	<i>The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:</i>
(a) Dealer supplies the seed and detassels the corn. Grower delivers the corn on the cob to the dealer.	\$1.64 a bushel.	\$1.72 a bushel.
(b) Grower supplies the seed, detassels and delivers the corn on the cob to the dealer.	\$1.64 a bu. and 55¢ a bu. = \$2.19 a bu.	\$1.72 a bu. and 55¢ a bu. = \$2.27 a bu.
(c) Grower supplies the seed, detassels, dries, shells and delivers the dried shelled corn to the dealer.	\$1.64 a bu. and 90¢ a bu. = \$2.54 a bu.	\$1.72 a bu. and 90¢ a bu. = \$2.62 a bu.

### Open Pollinated Corn for Seed

SCHEDULE E	1957	1956
	<i>The base price and a premium of 30% on the base price also additional allowances for certain varieties.</i>	<i>The base price and a premium of 30% on the base price also additional allowances for certain varieties.</i>
Yellow Dents (other than Early Golden Glow)	\$1.64 a bushel.	\$1.72 a bushel.
Other Dents (including Early Golden Glow)	\$1.64 a bushel and 10¢ a bu. = \$1.74 a bu.	\$1.72 a bushel and 10¢ a bu. = \$1.82 a bu.
Flints	\$1.64 a bushel and 50¢ a bu. = \$2.14 a bu.	\$1.72 a bushel and 50¢ a bu. = \$2.22 a bu.

## 6. The Berry Plan

Some 400 growers sold 2,255,203 qts. of strawberries valued at \$407,149.00; 398,668 qts. of red raspberries valued at \$157,751.00 and 210,080 qts. of purple raspberries valued at \$72,904.00 or a total of 2,864,051 qts. valued at \$637,804.00 for processing in 1957. This compares with 4,704,221 qts. of strawberries valued at \$891,742.00; 583,884 pts. of red raspberries valued at \$218,252.00 and 278,429 qts. of purple raspberries valued at \$93,790.00 or a total of 5,566,534 qts. valued at \$1,203,784.00 sold for processing in 1956.

Strawberry and raspberry minimum prices in 1957 compared with 1956 were:

	1957	1956
Strawberries .....	13½¢ per qt. box	15¢ per qt. box
Raspberries .....		
Red .....	Open Market	Open Market
Purple .....	27½¢ per qt. box	27½¢ per qt. box

## 7. The Bean Plan

Some 7,000 growers marketed approximately 975,000 bushels of edible dry beans in 1957 compared with 990,000 bushels in 1956. The minimum price to the

growers was \$6.15 per cwt. in 1957 compared to \$6.25 per cwt. in 1956. An additional storage allowance was made to the growers of 15¢ per cwt. on all beans sold during the period January 1st to July 31st in both years. A graduated scale of charges by dealers for grading and picking beans for the growers in excess of 2% damage and in excess of 18% moisture was negotiated and established. The fee deducted from the growers to support the minimum price in each year was 45¢ per bushel in addition to the regular 5¢ per bushel licence fee for administration purposes. Out of this fee 32¢ per bushel on the 1956 crop was returned to the growers and 37¢ per bushel (estimated) will be returned on the 1957 crop to the growers since its marketing was not completed at the time of writing this report. The 17¢ per bushel difference in 1956 and the estimated 8¢ per bushel difference in 1957 was used to market some 100,000 bushels of the 1956 crop and an estimated 50,000 bushels of the 1957 crop which was surplus to domestic requirements.

### 8. The Vegetable Plan

Some 11,500 growers sold 195,752 tons of tomatoes valued at \$6,854,377.00; 34,157 tons of green peas valued at \$3,402,619.00; 80,724 tons of sweet corn valued at \$2,059,962.00; 3,713 tons of green and wax beans valued at \$418,404.00; 5,588 tons of beets valued at \$192,594.00; 6,502 tons of cabbage valued at \$102,574.00; 12,163 tons of carrots valued at \$373,376.00; 11,681 tons of pumpkin and squash valued at \$113,594.00 and 1,062 tons of lima beans valued at \$129,371.00 for processing in 1957, or a total tonnage of 351,342 tons of vegetables valued at \$13,646,871.00.

This compares with 223,237 tons of tomatoes valued at \$7,052,228.00; 19,715 tons of green peas valued at \$1,958,500.00; 56,832 tons of sweet corn valued at \$1,420,773.00; 2,452 tons of green or wax beans valued at \$250,957.00; 8,299 tons of beets valued at \$264,281.00; 7,479 tons of cabbage valued at \$111,937.00; 12,587 tons of carrots valued at \$348,559.00; 6,259 tons of pumpkin and squash valued at \$56,763.00 and 899 tons of lima beans valued at \$93,327.00 for processing in 1956 or a total tonnage of 337,759 tons of vegetables valued at \$11,557,325.00.

Minimum prices for 1957 compared with 1956 were as follows:

	1957	1956
Tomatoes—No. 1 .....	\$ 41.50 per ton	\$ 37.00 per ton
No. 2 .....	25.50 " "	25.00 " "
Green Peas—graded average of tenderometer readings .....	98.50 " "	98.50 " "
for tenderometer readings above 121 .....	98.50 " "	88.50 " "
Sweet Corn .....	26.00 " "	25.00 " "
Green or Wax Beans .....	109.00 " "	100.00 " "
Beets		
(a) for beets graded by the processor		
3/4" to 1 1/4" diameter .....	71.00 " "	70.00 " "
1 1/4" to 1 3/4" " .....	42.00 " "	41.00 " "
1 3/4" to 2 1/2" " .....	30.00 " "	30.00 " "
2 1/2" to 4 1/2" " .....	15.00 " "	15.00 " "
(b) for ungraded beets 1 1/2" diameter and up .....	24.00 " "	24.00 " "
Cabbage .....	13.50 " "	13.00 " "
Carrots		
(a) ungraded minimum diameter .....	52.00 " "	52.00 " "
1 1/4" June 25th to Aug. 15th		



	1957		1956	
(b) ungraded minimum diameter .....	35.00	" "	34.00	" "
1½" Aug. 16th to Aug. 31st				
(c) ungraded minimum diameter .....	28.00	" "	27.00	" "
1½" Sept. 1st to Sept. 15th				
(d) ungraded minimum diameter .....	24.00	" "	23.50	" "
1½" Sept. 16th to Nov. 10th				
(e) ungraded minimum diameter .....	27.00	" "	27.00	" "
1½" Nov. 11th to Mar. 31st				
Lima Beans .....	107.00	" "	103.75	" "
Pumpkin and Squash .....	10.00	" "	9.00	" "
Long Green Cucumbers, No. 1 .....	45.00	" "	45.00	" "
No. 2 .....	10.00	" "	10.00	" "

### 9. The Hog Plan

Following clarification of the legal uncertainties through the amendments to both the Canada and the Ontario farm marketing legislation as a result of the 1957 decision of the Supreme Court of Canada on the validity of the Ontario Act the hog producers' marketing plan and regulations were revised and re-written. As a result the Ontario Hog Producers' Co-operative (the marketing agency appointed by the Ontario Hog Producers' Marketing Board) continued more actively through 1957 its program of establishing minimum prices daily on live hogs, of directing their marketing and providing for seven additional hog assembly points to the seven opened during the 1954-1956 period.

Chief item of interest during the period under review, however, centered around the marketing agency's directional program. This was gradually extended across the Province from west to east as the number of new hog assembly points was increased. As a result it was reported by the marketing agency that at the end of the fiscal year upwards of 80% of all the hogs graded in Ontario were being sold on the open market at 14 assembly points from 24 counties with the balance being shipped direct to the packers located outside the Province.

### 10. The Grape Plan

Some 825 growers marketed 24,125 tons of grapes valued at \$2,109,476.00 for processing in 1957. This compares with 23,371 tons of grapes valued at \$1,930,576.00 sold for processing in 1956.

Grape minimum prices in 1957 compared with 1956 were:

	1957	1956
Grapes .....	\$85.00 per ton	\$84.00 per ton

### 11. The Soya-Bean Plan

This plan is similar in principle to the other cash crop programs in operation except that the market for soya-beans is limited entirely to a few processors for manufacture into various soya oil and meal products and that Canada is not more than 50% self-sufficient at the present time in her production of soya-beans for her overall edible oil and meal requirements. Soya-beans may be imported free of duty and oil and meal may be imported at moderate tariff rates. Hence the cost of soya-beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya-beans, soya-bean oil and a host of other competing edible oils. Faced with this situation for the eighth time in its eight years of operation, a Negotiating Committee decision recommended that a fixed minimum price for soya-beans to the

4,000 interested Ontario growers was not practical, and that the price paid should be the trading price from day to day on an open market basis. A dealer's maximum charge of 10¢ per bu. to the grower for cleaning, handling and selling soya-beans, which due to competition between the dealers is seldom charged in full, and a discount of 2½¢ per bu. for each ½% moisture content over 14% and up to 18% to cover shrink and drying expenses and for soya-beans with moisture in excess of 18%, a discount of 5¢ per bu. for each ½% of moisture content with cash to be paid by the dealer to the grower for all soya-beans on delivery were the main terms of contract negotiated and established under the plan. Where soya-beans are dried, there shall be a maximum charge of 1¢ per bu. to the grower for each ½% of moisture content over 14%. After several years of increasing acreage the industry is now tending to stabilize itself at about present proportions. Acreage planted in 1957 was 252,000 acres compared to 225,000 acres in 1956. Yield increased in 1957 to 6,476,000 bu. compared to 4,905,000 bu. in 1956.

## 12. The Winter-Celery Plan

Due to the supply of celery for storage (celery marketed after October 15th in each year) being much below normal in 1957 and with strong markets existing for what supply was available the Ontario Winter-Celery Growers' Marketing Board decided to exempt all storage celery from the regulations of the plan and declare an open market so that each grower could sell his own crop.

## 13. The Honey Plan

As reviewed in previous annual reports this plan never came into operation since the honey producers, following the vote taken on the plan in 1950, felt it necessary to regulate the marketing of all honey sold in Ontario regardless of where the honey was produced. The Farm Products Marketing Act, however, only provides authority for the regulation of the marketing of farm products produced in the Province.

## 14. The Fresh-Peach Plan

As reviewed in previous annual reports this single sales agency plan has been in operation since 1954 and light crops, particularly in 1956, assisted in getting the new fresh peach marketing method established among the growers and the trade. But 1957 turned out to be a different year. Severe financial reverses were suffered by the Ontario Fresh-Peach Growers' Marketing Board and its marketing agency, the Ontario Peach Growers' Co-operative, which totalled some \$175,000.00. Losses were chiefly caused by inventory losses due to price drops with large stocks of peaches on hand and to claims by receivers due to brown stem rot.

During the year some growers decided to ignore the regulations approved under the plan and also refused to pay their fees and service charges. Prosecutions resulted in a number of them being fined. These growers then organized the Ontario Peach Growers' Protective Association to solicit the support of public opinion against the fresh-peach marketing plan. As a result of this opposition the Ontario Fresh-Peach Growers' Marketing Board requested the Farm Products Marketing Board for a vote of the growers on the continuation of the plan in 1958. This will be conducted early in the next fiscal year.

Over the 10-week marketing period in 1957 some 53,221,000 pounds of peaches were marketed by the agency having a total approximate value of \$2,900,000.00 to the grower compared to 21,000,000 pounds of peaches having a total value of \$1,400,000.00 to the grower in 1956.

### 15. The Essex-Kent Sett Onion Plan

In 1957 there was approximately 580 acres of sett onions planted or approximately the same as in 1956. Due to a more favorable growing season yield was higher at 200,000 — 50 lb. bags in 1957 compared to 150,470 — 50 lb. bags in 1956. For other reasons, however, 1957 was a year of poor financial returns to the producers. Growers in Orange County, New York, the leading competitors on the Canadian market, had an unusually heavy crop and were prepared to quote prices to sell their surplus on any market. As a result the marketing agency had to reduce prices in order to sell and sometimes were too late in doing so with the result the Canadian market was flooded with U.S. onions. During the month of July alone over 100 carloads of onions were imported, a quantity sufficient to delay the sale of 75,000 bags of Ontario sett onions for a period of three months. Consequently, Ontario sett onions were sold at salvage prices and, being denied their traditional early market, also played havoc with the marketing of the large 1957 Ontario onion seed crop of over 1,500,000 — 50 lb. bags. The average price received by the growers for sett onions in 1957 of \$1.20 per 50 lb. bag was well below the average price received by the grower of \$3.14 per 50 lb. bag in 1956 or \$1.52 per 50 lb. bag in 1955.

### 16. The Flue-Cured Tobacco Plan

As reviewed at the beginning of this report this plan was approved on June 20th, 1957. Since that time the Ontario Flue-Cured Tobacco Growers' Marketing Board has been putting into effect the program which was widely discussed during the campaign before the vote.

As a first step in its program financing was arranged and the construction of three auction warehouses at Delhi, Tillsonburg and Aylmer completed. The new Growers' Board also adopted the mechanical auctioneer or Dutch electric clock in place of the usual live auctioneer as the method to be followed in auctioning flue-cured tobacco.

Secondly a system of Government tobacco grades was worked out with the assistance of the buyers, producers and Government technical officers. These grade standards have been approved under the Ontario Farm Products Grades and Sales Act since the Government of Canada presently has no authority under which it can establish grades. The grade standards are administered by Federal inspectors, however, and as far as is known appear to be working satisfactorily.

Thirdly a minimum average price of 49¢ per lb. on 100% of the crop together with other conditions of sale was established, after preliminary negotiations failed between growers and buyers, by a Board of Arbitration. The award represented a 3½¢ per lb. increase over the 1956 minimum average price and was the first significant jump in the price of tobacco to the grower for the past six years.

The tobacco market opened in December a month to six weeks late compared to the time of the usual opening due to equipping the warehouses. By the end of the year only 2.6 million pounds had been sold out of a crop totalling approximately 149 million pounds. By January 10th, 1958 when some 11 million pounds had moved it was obvious the rate of selling was too slow to market the entire crop before spoilage set in with the advent of warm weather in late April. The 10 bale (55 lb. each) per pallet unit with each bale unwrapped to permit examination by the buyer had proved too small to obtain the sales volume needed in the circumstances. At this point the Prime Minister called a conference of the growers and buyers in an effort to work out a program that would move the crop before any of it moulded or rotted by Spring and at the same time would not sacrifice any



elements of the bale auction method of anonymous selling deemed so important by the growers. On January 15th the terms of a new agreement were reached. The essential points were that the buyers agreed to a 30 bale per pallet unit with only 1 bale unwrapped for examination. The growers undertook to assure that the 1 unwrapped bale was a uniform sample of the 29 wrapped bales. The growers also undertook to provide as far as possible that a 65-70% ratio of loose tobacco to 30-35% tied tobacco would be offered for sale daily in order to accommodate both domestic and export buyers with their traditional proportions of the crop. Daily sales rose to between two and two and one-quarter million pounds compared to daily sales of less than one million pounds before the new agreement came into effect. The marketing of the 1957 crop concluded on April 18th, 1958. The crop marketed totalled 147,873,775 pounds and was sold at an average price of 50.32¢ per pound or 1.32¢ per pound above the minimum average price award of 49¢ per pound for a total value of \$74,410,083.58 to the producers.

### THE CO-OPERATIVE LOANS ACT

There has been a marked increase in the number of farmer-owned co-operatives dealing in grains and feeds in recent years and in order to provide the facilities for drying and elevator storage many of these co-operatives have taken advantage of loans available under this Act to help finance these undertakings. While the number of loans approved during the year under review were lower than the number approved in the preceding year the total amount loaned was greater than in any previous year. This may be taken as an indication of the size and importance farmer-owned co-operatives in Ontario and of the value of their property and facilities to their members.

During the year ended March 31st, 1958 eleven loans totalling \$705,539.00 were made as listed below compared to eighteen loans totalling \$582,000.00 made during the year ended March 31st, 1957.

1. Dixie Growers' Co-operative Ltd. _____	Cold Storage	\$ 83,289.00
2. Elgin Co-operative Services _____	Elevators & Feed Mill	75,000.00
3. Norfolk Fruit Growers' Association _____	Cold Storage	100,000.00
4. Oxford Farmers' Co-op. Produce Co. Ltd. _____	Feed Mill	43,750.00
5. Oxford Fruit Co-operative Ltd. _____	Cold Storage	50,000.00
6. St. Lawrence Valley Co-op. Cold Storage Ltd. _____	Cold Storage	90,000.00
7. Vankleek Hill Co-operative _____	Feed Mill	20,000.00
8. Waterloo County Supplies Co-operative _____	Feed Mill	66,000.00
9. Peterborough District Co-op. Services _____	Feed Mill	85,000.00
10. Villa Nova Milk Products Co-op. _____	Milk Process Plant	80,000.00
11. Manitoulin Turkey Co-op. Ltd. _____	Poultry Process Plant	12,500.00
	Total	\$705,539.00

### THE FARM PRODUCTS CONTAINERS ACT

Licence fees in the amount of 1% added to the manufacturer's selling price of all wooden and paper containers manufactured and sold for use in the marketing of fresh fruits and vegetables produced in Ontario have been levied and paid to the Ontario Fruit and Vegetable Growers' Association since November 1st, 1947. The fees received during the fiscal year ended March 31st, 1957, amounted to \$27,909.27 and the total fees received to-date by the Association since the levy was imposed amount to \$314,128.85.

Licence fees in the amount of 5% added to the manufacturer's selling price of all cans and paper containers manufactured and sold for use in the marketing of honey produced in Ontario, have been levied and paid to the Ontario Beekeepers' Association since April 1st, 1948. The fees received during the fiscal year ended March 31st, 1958, amounted to \$1,003.91 and the total fees received to-date by the Association since the levy was imposed amount to \$127,803.60.

## *Dairy Branch*

The Dairy Branch was re-organized, effective July 1st, 1957, with the Proclamation of The Milk Industry Act, 1957, which replaced The Milk Industry Act, 1954. The purpose of the legislation is to streamline the dairy administration within the Ontario Department of Agriculture. The Milk Control Board of Ontario, which administered fluid milk, and the Milk Products Board of Ontario which administered milk products under The Milk Industry Act, 1954, were replaced under the new legislation by one over-all Board — the Milk Industry Board of Ontario. The following personnel was appointed to the *Board* —

Judge A. B. Currey, Chairman,  
Mr. W. Frank Jones, Member,  
Mr. Erle Kitchen, Member,  
Mr. A. P. Clark, Secretary.

The Dairy Branch, for administrative purposes, was divided into two divisions — The Fluid Milk Division, with Mr. C. M. Meek as Director and The Milk Products Division, with Mr. C. E. Lackner as Director and Mr. J. L. Baker, Assistant Director. Provision was made for the appointment of a Dairy Commissioner with the responsibility of supervising and co-ordinating the administration of The Milk Industry Act, 1957. Mr. Everett M. Biggs was appointed Dairy Commissioner under the Act.

The Milk Industry Act, 1957 has been co-ordinated in such a way as to provide for greater cohesion within the dairy industry and at the same time eliminate repetition or duplication between sections of the Act. The 1957 legislation is divided into three parts — Part I, dealing with the production and marketing of milk and milk products — Part II, providing for certain municipal control of vendors of fluid milk — and Part III, providing for penalties under the Act. The legislation also provides for a Milk Industry Advisory Committee, with the task of advising the Minister and the Dairy Commissioner on industry matters. This Advisory Committee is made up of six processors and six producers.

The Ontario Milk Producers' Co-ordinating Board, provided for in the 1954 legislation, continues under the 1957 Act.

In the re-organization the province has been divided into 27 districts, with a senior dairy fieldman in charge of each district. He is responsible for all aspects of the production and marketing of milk and cream as provided under the Act. Because of the concentration of cheese production in certain areas several fieldmen have the responsibility for cheese production under the general supervision of the senior dairy fieldman. At the present time there are 42 men employed in the Dairy Branch — A Chief Cheese Instructor is employed for Central and Western Ontario and one for Eastern Ontario to deal with special problems.

The 1957 legislation provided for a Formula Committee for fluid milk pricing, with a provision that the Committee could recommend an acceptable formula to the Milk Industry Board. The Board, in turn, may approve the formula and refuse to file any agreement between producers and distributors where prices are not in keeping with the price formula for fluid milk. The Formula Committee was appointed by order-in-council dated December 5, 1957, as follows: Chairman, Everett M. Biggs — Members, Dr. H. L. Patterson and Professor Ralph Campbell. A formula has been recommended by the Committee for the consideration of the Milk Industry Board.

## EXHIBITIONS AND FAIRS

The Dairy Branch Head Office and field staff co-operated with the exhibition and fair committees in connection with the following: The Royal Winter Fair — Canadian National Exhibition — Ottawa Winter Fair — The Western Fair — Middlesex Seed Fair and the North Bay Rotary Fair. The field staff has also worked closely with the local fair Boards in arranging educational exhibits.

The Dairy Branch staff in co-operation with the Canadian National Exhibition and the Ontario Milk Producers' Co-ordinating Board arranged a Dairy Queen Competition at the CNE for the second year in 1957. This competition is under the sponsorship of the Milk Producers' Co-ordinating Board. Forty-eight young farm women from various parts of the province competed for the title of Dairy Queen in 1957 — the winner being Miss Jean Peterson of Halton County.

Plans have been completed for a similar Competition in 1958.

## Milk Quality

Steady progress has been made with a milk quality program for the province. Regulations, which require uniform quality for fluid milk and all milk and cream for manufacturing purposes, have been well received by the industry and have had a marked effect upon production. While the regulations dealing with the quality of fluid milk are provincial regulations in most cases the enforcement was left to municipal authority. This has not been entirely satisfactory. The Dairy Branch field personnel in 1957 has been giving supervision to fluid milk quality and farm production conditions in those areas in which there is no municipal supervision. It is intended to extend gradually this supervision to other areas if municipalities desire it.

## Staff

In 1957, the following joined the staff of the Dairy Branch: Mr. R. C. Bradford — Mr. J. F. Jewson — Mr. G. S. Munn — Mr. K. C. Reynolds. Mr. Delbert Connell retired. Mr. Bruce Scott left the Dairy Branch for employment in industry and he was replaced by Mr. T. G. Hicks in head office.

## Publications

A special committee on publications under a general Department of Agriculture Committee has been set up under the chairmanship of the Dairy Commissioner. The function of this committee is to work closely with the industry and branches of the Department to determine the publication and bulletin needs. During 1957, the Agricultural Engineering Department of the O.A.C. published a bulletin on milk house construction. This publication was prepared in co-operation with the Dairy Branch, the O.A.C. Department of Dairy Science, and the Ontario Department of Health.

## Research

The Dairy Branch has co-operated with the O.A.C. and the K.A.S. in various research projects. General studies on bulk milk handling in Ontario have continued under the Department of Agricultural Economics, O.A.C. K.A.S. has continued studies on milk quality and a project is now under way at Kemptville to study water supply problems at dairy plants in Eastern Ontario.



Professor A. G. Leggatt of the O.A.C. Department of Dairy Science has completed his study requested by the Dairy Branch re pipeline milkers. Studies were completed by the Dairy Science Department at the O.A.C. regarding methods of cream sampling and the types of containers most suitable for the storing of cream samples.

A study requested by the Dairy Branch on the economic conditions in Ontario cheese factories was completed in 1957 by the Farm Economics Branch and presented to the industry.

### Courses

During 1957-58, members of the Dairy Branch staff co-operated as instructors in the 3-month dairy short courses at the O.A.C. and at Kemptville during the period. January to March. Three special courses were held at the O.A.C. to qualify drivers of bulk milk tanks as testers and graders of milk.

### Press, Radio and Television

During the year closest co-operation has been maintained with the press, radio and television. Members of the Dairy Branch have made several radio broadcasts, some telecasts and several recordings were made on dairy subjects for local station broadcasting.

### Meetings Attended Outside of Ontario

Mr. J. M. Bain, chief cheese instructor, western Ontario, attended a meeting of the Wisconsin Cheesemakers and acted as judge in the World Cheddar Cheese Competition in October, 1957. Mr. Everett Biggs attended the annual meeting of the National Dairy Council, held in Winnipeg in September, 1957 and the annual meeting of the Dairy Farmers of Canada, held in Quebec City in January, 1958.

### Industry Dinner

A special industry dinner was held in June, 1957, which was attended by industry leaders from the processing and producing side of the industry and senior representatives of the Ontario Department of Agriculture. Problems of the industry were discussed.

### The Oleomargine Act

The Oleomargarine Act is administered by the Dairy Commissioner, who is Chief Inspector under the Act. All manufacturers and wholesalers of oleomargarine are licensed and strict supervision is given to the advertising of oleomargarine; the composition of the product, and its sale in restaurants. There are two field inspectors.

#### OLEOMARGARINE INSPECTION REPORT

April 1, 1957 — March 31, 1958

1 —	Total No. of Towns, Villages and Cities covered .....	170	
2 —	" " " Manufacturing Establishments Inspected .....	8	
3 —	" " " Wholesalers Checked .....	34	
4 —	" " " " Licences issued because of inspection ....	3	
5 —	" " " Restaurants inspected .....	2010	
6 —	" " " " Not Using Margarine (any form) .....	1121	55.7%
7 —	" " " Using Margarine for baking and cooking .....	410	20.3%
8 —	" " " " on toast .....	280	13.9%
9 —	" " " " on sandwiches .....	245	12.1%

10 —	"	"	Mixing Margarine with Butter .....	160	7.09%
11 —	"	"	" Restaurants Serving Margarine on Toast or in Sandwiches, complying with the Act .....	62	3.0%
12 —	"	"	" Manufacturing Licences Issued .....	10	
13 —	"	"	" Plants .....	8	
14 —	"	"	" Brands Presently being sold .....	28	
15 —	"	"	" Wholesalers .....	130	
16 —	"	"	" Retail Stores checked .....	978	
17 —	"	"	" Moisture Tests Made .....	47	

### The Edible Oil Products Act, 1952

The Edible Oil Products Act comes under the supervision of the Dairy Commissioner, who is also Chief Inspector under the Act. The field inspectors appointed under The Oleomargarine Act also act as inspectors under The Edible Oil Products Act. Only one person has been licensed as a manufacturer or wholesaler of a designated edible oil product.

### FLUID MILK DIVISION

The fluid milk branch of the Dairy Industry experiences many changes annually. During recent years there have been many improvements in dairy equipment for plants and farms and, in addition there have been changes in methods of distribution of milk products to consumers. Some of the developments have to do with fluid milk distribution and to the bulk handling of milk on farms.

### THREE-QUART GLASS CONTAINERS

Reference was made in the 1956-1957 report to the introduction of a new type milk container, a three-quart glass jug. This type of container has made considerable headway in the Toronto market where it is used mainly for sales of fluid milk products to chain stores. Milk distributors have not used this type of container for direct sale to the householder. Figures are not available showing the sales of milk in the three-quart jug but it is expected statistical data will be available within a year. Outside of the Toronto market the container has not been adopted to any extent. The three-quart contained was introduced in the Aylmer market in 1956 and during its first year was made available in a few Western Ontario towns and cities but has not gained much headway in Western Ontario. The City of Peterborough is the only point in Eastern Ontario where the three-quart container is sold.

### Two-Quart Containers

A new container of two-quart capacity, paper as well as glass, was introduced by a few distributors in the Toronto market. The glass container is used almost exclusively for home delivery while the paper container is used for distribution to stores.

### Paper Containers

As in recent years paper containers continue to replace glass bottles for the store trade. Very little interest has been noted in the use of paper for retail home deliveries. A year ago some five dairies were selling their fluid milk products in paper exclusively but one of these has reverted to glass containers for a portion of his business. No reports of any other dairies changing to paper containers for home delivery have been received.

## CONSUMER PRICES

In most markets the price of milk was increased on October 1, 1957 by one cent per quart. This increase followed an upward revision of producer prices on October 1 and an increase in wages paid dairy employees. The Table "Market Information" shows the home-delivered retail price per quart of standard milk in all markets. Prices vary from seventeen cents a quart to twenty-seven cents a quart.

Two years ago consumer prices were decontrolled in all but seven markets namely, Hamilton, London, Niagara Falls, St. Catharines, Toronto, Windsor and Ottawa. A regulation rescinding the maximum prices in these markets was passed in September, 1957. As a result competition has been keen but has largely been on the type of containers and on store price differentials of a cash and carry price ranging from two to five cents per quart below the home-delivered price.

In the Toronto market where store differentials and multiple containers have been largely adopted, the consumer price is generally as follows:

24c	per quart in glass delivered to home
19c	" " three-quart jug cash and carry
21½c	" " two-quart paper container cash and carry
20c to 22c	" " one-quart glass or paper cash and carry
21c to 22c	" " two-quart glass delivered to home

## Partly Skimmed Milk

The sale of partly skimmed milk of two percent butterfat content was introduced two years ago. The demand by consumers for the product has been favorable. The price incentive of two to three cents per quart lower than standard milk when purchased in quart bottles, to as much as six cents per quart when purchased from some sources in three-quart jugs, has resulted in the volume of sales as reported by dairies as follows:

*SALES OF PARTLY SKIMMED MILK BY COMMERCIAL DAIRIES IN ONTARIO  
NOVEMBER, 1956 to MARCH, 1958*

<i>Month</i>	<i>Sales (Quarts)</i>	<i>Sales Index Nov., 1956—100</i>
November, 1956 .....	1,022,700	100
December .....	1,245,900	121.8
January, 1957 .....	1,279,900	125.1
February .....	1,361,200	133.1
March .....	1,690,700	165.3
April .....	1,791,100	175.1
May .....	1,859,700	181.8
June .....	1,913,900	187.1
July .....	1,739,300	170.1
August .....	1,828,200	178.8
September .....	1,992,500	194.8
October .....	2,380,800	232.8
November .....	2,518,200	246.2
December .....	2,595,000	253.7
January, 1958 .....	2,638,600	258.0
February .....	2,552,400	249.6
March .....	2,891,300	282.7

## Milk Dispensers

A special milk dispenser, chiefly for dispensing milk in restaurants, has been developed in recent years and is proving an acceptable method of dispensing milk. The



dispenser is made of stainless steel and is equipped with refrigeration for keeping the milk in the can at a proper temperature. The cans, which fit into the dispenser, are filled at the dairy. The milk is dispensed through a sanitary plastic tube protected from contamination.

### BULK MILK HANDLING

The Farm Bulk Tank method of handling milk continued its rapid growth of the previous year. The change to this method from that of cooling and transporting milk in eight-gallon cans has been almost entirely in the Fluid Milk Branch of the Dairy Industry and has proceeded rapidly in some markets.

One concentrated milk plant has had its producers install farm bulk tanks and fourteen producers all on one bulk transport route have completed installations which are now operating.

#### GROWTH OF BULK METHOD OF HANDLING MILK

Fluid Market	Number of Dairies			Number of Bulk Transports			Number of Bulk Producers		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
Aurora .....	1	2	2	2	3	3	38	55	56
Barrie .....	1	1	1	1	1	1	35	31	38
Bolton .....	---	1	1	---	1	1	---	7	8
Bowmanville .....	---	---	1	---	---	1	---	---	13
Fort William .....	---	---	1	---	---	1	---	---	19
Galt .....	---	---	1	---	---	1	---	---	18
Guelph .....	---	1	1	---	2	2	---	30	31
Hamilton .....	1	2	4	1	2	6	12	10	97
Ingersoll .....	---	1	1	---	1	1	---	8	9
Kitchener .....	1	1	1	1	2	2	32	36	37
London .....	---	1	1	---	1	1	---	27	35
Markham .....	---	1	1	---	1	1	---	8	8
Newmarket .....	---	1	1	---	1	1	---	8	8
Oshawa .....	1	3	3	2	5	5	29	95	95
Ottawa .....	---	1	1	---	1	1	---	26	24
Pembroke .....	---	---	1	---	---	1	---	---	11
Port Hope .....	---	---	1	---	---	1	---	---	17
Smiths Falls .....	---	1	2	---	1	2	---	4	12
St. Catharines .....	---	1	1	---	2	2	---	43	41
Toronto .....	7	12	15	11	39	110	292	952	2,169
Whitby .....	1	1	1	1	1	1	15	16	15
Woodbridge .....	---	---	1	---	---	1	---	---	18
Woodstock .....	---	1	1	---	1	1	---	9	8
Total Fluid .....	13	32	44	19	65	147	453	1,365	2,787
Concentrated Milk Plant .....	---	---	1	---	---	1	---	---	14
Total .....	13	32	45	19	65	148	453	1,365	2,801

#### COURSES FOR MILK GRADERS' CERTIFICATES FOR OPERATORS OF BULK MILK TRANSPORT TRUCKS

With the advent of bulk milk handling, the checking of the flavor of the milk and the sampling and weighing has been transferred from the plant to the farm.

In order to have the operator of the bulk transport truck, who performs the duty of receiving the milk, qualified to check on its quality, sample for butterfat testing, and record the weight of the milk in the farm tank, the Dairy Department at the Ontario Agricultural College has co-operated by holding courses of instruction as follows:

*BULK MILK COURSES — DAIRY DEPARTMENT, O.A.C.*

<i>Date of Course</i>	<i>Students Registered</i>
1955 — April 12 to 19 .....	18
October 5 to 14 .....	11
1956 — April 18 to 27 .....	23
October 1 to 10 .....	23
1957 — April 22 to May 1 .....	39
October 15 to 24 .....	46
1958 — April 15 to 25 .....	35
April 29 to May 9 .....	31

**QUALITY MILK PRODUCTION**

To implement the policy of the Department that only quality milk be marketed from dairy farms, Fieldmen have commenced inspection of farms to see that certain basic facilities in buildings and equipment are available and that proper techniques are used. These services have commenced in a number of the smaller markets where the local authorities have not been inspecting milk supplies. In addition, Fieldmen have been interviewing County and District Health Units and Local Health Departments with a view to lending assistance in quality milk production programs.

Assistance to dairy plant personnel in the grading of milk and the performing of Resazurin and Sediment tests has been given. Producers and distributors have shown interest in this work and there is every indication that an effective program of milk quality production can be developed.

**PRICE FORMULA**

The Price Formula for determining the price to be paid producers for fluid milk plants, which was adopted in 1954 in many of the Fluid Milk Markets, brought about an increase to producers of nineteen cents per one hundred pounds on October 1, 1957 in those markets which have negotiated collective bargaining agreements providing for Formula pricing. This was the second nineteen cent increase since 1954, the first being on November 1, 1956.

The Formula takes into account economic factors which reflect production costs of producers and provides that any increase or decrease in the price to be paid shall be in an amount of nineteen cents or any multiple of nineteen cents per hundred pounds. Any change only becomes effective when the average for three consecutive months is nineteen cents or more. The following table gives the statistical data on price changes since the inception of the Price Formula in 1954.

**PRICE FORMULA CALCULATIONS**

<i>Month</i>	<i>Formula Price</i>		<i>Change in Price</i>		<i>Basic Price</i>
	<i>Monthly</i>	<i>3 Months Average</i>	<i>Monthly Plus or Minus</i>	<i>3 Months Average Plus or Minus</i>	
July '54	4.48	4.48			4.53
July '55	4.645	4.62	+.115		4.53
Aug. '56	4.716	4.66	+.186	+.13	4.53
Sept. '56	4.7238	4.6955	+.1938	+.1655	4.53
Oct. '56	4.7463	4.7288	+.2163	+.1987	4.72

New Basic Price effective November 1, 1956 — \$4.72

July '57	4.8943	4.8903	+.1743	+.1703	4.72
Aug. '57	4.9286	4.9066	+.2086	+.1866	4.72
Sept. '57	4.9419	4.9216	+.2219	+.2016	4.91

## New Basic Price effective October 1, 1957 — \$4.91

Oct. '57	4.9653	4.9452	± .0553	± .0352	4.91
Nov. '57	4.9532	4.9534	± .0432	± .0434	4.91
Dec. '57	4.9469	4.9551	± .0469	± .0451	4.91
Jan. '58	4.9355	4.9452	± .0255	± .0352	4.91
Feb. '58	4.9690	4.9504	± .0590	± .0404	4.91
Mar. '58	4.9172	4.9405	± .0072	± .0305	4.91

## TABLE ON MARKET INFORMATION AS OF MARCH 31, 1958 showing:

1. Prevailing retail Consumer Prices by markets per quart standard milk delivered. These are competitive prices, there being no control of consumer prices.
2. Producer Prices in all markets. The letter "F" — beside the price means price based on Formula.
3. Markets with Collective Bargaining Agreements or Awards on producer prices Agreements 57-22 to 58-17FM were filed during the year.

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
.27	Hornepayne		
	Chapleau .....	5.93	
.26	Blind River .....	5.56	57-14
	Espanola .....	5.69F	57-35F
	Massey .....	5.69F	57-35F
	Nipigon .....	5.50F	57-34
	Sault Ste. Marie .....	5.69F	A57-5F
	Thessalon .....	5.69F	A57-5F
.25	Ansonville .....	5.50F	A54-1
	Cochrane .....	5.55F	58-9FM
	Copper Cliff .....	5.57	57-44F
	Elk Lake .....	5.43F	57-18
	Englehart .....	5.43F	57-18
	Fort William .....	5.40F	58-4F
	Geraldton-Beardmore .....	5.65	53-45
	Hearst .....	4.60	
	Iroquois Falls .....	5.50F	A54-1
	Kapuskasing .....	5.55F	56-19
	Matachewan .....	5.43F	57-18
	Levack .....	5.57	57-44F
	New Liskeard .....	5.43F	57-18
	North Bay .....	5.19F	A57-4
	Port Arthur .....	5.40F	58-4F
	Port Colborne .....	4.96F	A54-3
	Sturgeon Falls .....	5.19F	57-38F
	Sudbury .....	5.57	57-44F
	Timmins .....	5.65F	57-21
	Verner .....	5.19F	57-38F
.24	Beamsville .....	4.96F	A54-3
	Bracebridge .....	4.91F	54-28
	Chatham .....	4.96F	A54-5
	Chalk River .....	4.91	
	Cooksville .....	4.91F	54-41
	Dresden .....	4.96F	A54-5
	Dryden .....	5.40F	58-11FM
	Dundas .....	4.96F	57-33



<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Essex .....	4.96F	A54-6
	Fort Erie .....	4.84F	55-8
	Fort Frances .....	5.20	54-1
	Gravenhurst .....	4.91F	54-28
	Grimsby .....	4.96F	57-33
	Haliburton .....	4.78	
	Hamilton .....	4.96F	57-33
	Huntsville .....	4.91F	54-28
	Kenora .....	5.00F	58-12FM
	Kirkland Lake .....	5.43F	57-18
	Leamington .....	4.96F	A54-8
	Matheson .....	5.43F	57-42F
	Niagara Falls .....	4.96F	A54-3
	Niagara-on-the-Lake .....	4.96F	54-3
	Oakville .....	4.96F	54-28
	Ottawa .....	4.96F	57-26
	Pembroke .....	4.91F	54-28
	Port Dalhousie .....	4.96F	A54-3
	Ridgetown .....	4.96F	A54-5
	Ridgeway .....	4.84F	
	St. Catharines .....	4.96F	A54-3
	Sarnia .....	4.91F	54-28
	Sioux Lookout .....	5.20	
	Stoney Creek .....	4.96F	57-33
	Thorold .....	4.96F	A54-3
	Tilbury .....	4.96	
	Toronto .....	4.91F	54-41
	Wallaceburg .....	4.96F	A54-5
	Welland .....	4.96F	A54-3
	Wheatley .....	4.96	
	Windsor .....	4.96F	A54-9
	Woodbridge .....	4.80F	57-23
.23	Acton .....	4.81F	54-32
	Ajax .....	4.81	
	Arnprior .....	4.81F	54-28
	Aurora .....	4.78F	57-48F
	Barrie .....	4.81F	54-28
	Belleville .....	4.74F	57-10
	Blenheim .....	4.77	57-32
	Blyth .....	4.81F	54-28
	Bolton .....	4.69F	57-23
	Brampton .....	4.81F	54-28
	Brantford .....	4.81F	A54-2
	Brockville .....	4.81F	54-28
	Burks Falls .....	4.58	
	Caledonia .....	4.93F	58-6FM
	Clinton .....	4.74F	57-36F
	Cobourg .....	4.81F	54-28
	Collingwood .....	4.81F	54-35
	Comber .....	4.59	
	Cornwall .....	4.81F	56-5
	Dunnville .....	4.88F	55-11
	Exeter .....	4.81F	54-28
	Galt .....	4.81F	54-28
	Gananoque .....	4.81F	57-3
	Georgetown .....	4.81F	54-28
	Goderich .....	4.81F	54-28

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Gore Bay .....	4.69	
	Guelph .....	4.81F	54-28
	Hespeler .....	4.81F	54-28
	Ingersoll .....	4.81F	A58-2FM
.23	Kincardine .....	4.62F	A57-3
	Kingston .....	4.81F	54-28
	Kingsville ..	4.96F	A54-7
	Kitchener .....	4.81F	54-28
	LaSalle .....	4.96F	54-6
	Lindsay .....	4.81F	54-28
	Little Current .....	4.88F	58-3F
	London .....	4.81F	57-47F
	Milton .....	4.81F	54-28
	Napanee .....	4.81F	57-7
	Newmarket .....	4.81F	54-37
	Orillia .....	4.76F	54-28
	Oshawa .....	4.81F	55-6
	Owen Sound .....	4.81F	54-30
	Paris .....	4.81F	54-28
	Parry Sound .....	4.81F	55-1
	Peterborough .....	4.81F	54-28
	Petrolia .....	4.91F	54-28
	Port Elgin .....	4.62F	A57-3
	Port Hope .....	4.81F	54-28
	Powassan .....		
	Preston .....	4.81F	54-28
	Rainy River .....	4.80F	58-17FM
	Renfrew .....	4.81F	54-28
	St. George .....	4.81	
	St. Marys .....	4.81F	54-28
	Southampton .....	4.62F	A57-3
	South River .....	4.59	
	Stayner .....	4.81F	54-35
	Stratford .....	4.81F	54-35
	Strathroy .....	4.81F	56-9
	Sundridge .....	4.51	
	Thamesville .....	4.67	
	Tobermory .....	4.62F	A57-3
	Trenton .....	4.74F	58-13FM
	Waterdown .....	4.96F	57-33
	Waterloo .....	4.81F	54-28
	Whitby .....	4.81F	54-40
	Wiarton .....	4.62F	A57-3
	Wingham .....	4.81F	54-28
	Woodstock .....	4.81F	A58-2FM
.22½	Mattawa .....	4.69	
.22	Alliston .....	4.88	56-2
	Alvinston .....	4.60	
	Aylmer .....	4.62	58-2F
	Bancroft .....	4.30	
	Barry's Bay .....	4.40	
	Bowmanville .....	4.81F	54-28
	Bridgen .....	4.70	52-82
	Brighton .....	4.55F	58-1F
	Campbellford .....	4.62F	58-10FM
	Chesley .....	4.62F	A57-3

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Colborne .....	4.55F	58-1F
	Creemore .....	4.40	
	Delhi .....	4.62	
	Durham .....	4.69F	
	Elmvale .....	3.98	
	Erin .....	4.59	
	Fergus .....	4.63F	57-11
	Forest .....	4.68	
	Grand Valley .....	4.62F	A57-6F
	Hagersville .....	4.60	
	Hawkesbury .....	4.54	
	Hensall .....	4.35	57-39F
	Lakefield .....	4.50	
	Lion's Head .....	4.62F	A57-3
	L'Original .....	4.54	
	Listowel .....	4.81F	54-28
	Lucan .....	4.50	
	Lucknow .....	4.62F	A57-3
	Meaford .....	4.81F	57-27
	Markham .....	4.57	
	Midland .....	4.62	
	Mildmay .....	4.62F	A57-3
	Milford Bay .....	4.59	
	Millbrook .....	4.41 (farm)	
	Milverton .....	4.34	
	Noelville .....	5.00	57-29
	Norwich .....	4.50	
	Orangeville .....	4.62F	A57-6F
	Orono .....	4.55 (farm)	
	Paisley .....	4.62F	A57-3
	Penetang .....	4.62	
	Perth .....	4.24	
	Port Dover .....		
	Port McNicholl .....	4.62	
	Port Perry .....	4.57	
	Prescott .....	4.68	
	Russell .....	4.69	
	St. Jacobs .....	4.60	
	St. Thomas .....	4.62	
	Selkirk .....	4.88	
	Shelburne .....	4.62	57-6F
	Simcoe .....	4.62	
	Smith Falls .....	4.62F	A58-1F
	Smithville P.D. ....		
	Stouffville .....	4.62	
	Sutton West .....	4.68	
	Tamworth .....	3.75	
	Teeswater .....	4.62F	A57-3
	Thornbury .....	4.62	
	Tillsonburg .....	4.62	
	Uxbridge .....	4.57	
	Victoria Harbour .....	4.62	
	Walkerton .....	4.62F	A57-3
	Waterford .....	4.62	
.21	Ailsa Craig .....	4.49	57-17
	Arthur .....	4.44	
	Athens .....	3.54	
	Bloomfield .....	4.48F	57-31



<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Burford .....	4.35	53-25
	Carleton Place .....	4.15	
	Cherry Valley .....	4.48F	57-31
	Coldwater .....	4.34	
	Cumberland .....	3.75	
	Dundalk .....	4.18	
	Eganville .....	4.79	
	Elmira .....	4.45	
	Elora .....	4.44	57-30
	Frankford .....	4.24	
	Glencoe .....	4.39	
	Hanover .....	4.62	
	Kemptville .....	3.90	57-41F
	Lanark .....	3.89	
	Markdale .....	4.40	
	Mount Forest .....	4.45	
	New Hamburg .....	4.50	
	Oil Springs .....		
	Pakenham P.D. ....		
	Picton .....	4.48F	57-31
	Rockwood .....		
	Seaforth .....	4.43	57-22
	Scotland P.D. ....		
	Tottenham .....	4.29	58-16FM
	Thedford .....		
	Tweed .....	4.00	57-37F
	Wellington .....	4.48F	57-31
	Windemere .....	4.45	
.20	Alfred .....	3.50	
	Almonte .....	3.90	
	Bobcaygeon .....	3.70	
	Cardinal .....	4.00	55-10
	Cayuga P.D. ....		
	Chatsworth .....	4.18	
	Chesterville .....	3.80	
	Fenelon Falls .....	3.88	
	Harriston .....	4.09	
	Hastings .....	4.00	
	Havelock .....	3.75	
	Lancaster .....	3.70	
	Madoc .....	3.89	56-21
	Marmora .....	3.89	
	Merrickville .....	3.79	
	Mitchell .....	4.20	
	Morrisburg .....	4.00	
	Mount Albert P.D. ....		
	Norwood .....	3.98	
	Palmerston .....	4.10	
	Plantagenet .....	3.50	
	Rockland .....	3.88	
	Stirling .....	4.00	
	Westport .....	3.45	
	Zurich .....	4.10	
.19	Brussels .....	4.00	52-27
	Casselman .....	3.50	
	Neustadt P.D. ....		

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Parham .....	3.84	
	Tavistock .....	3.50	
	Vankleek Hill .....	4.10	
.18	Winchester .....	3.50	55-12
.17	Alexandria .....	3.40	

### BONDING OF DISTRIBUTORS

The regulations provide that distributors shall furnish security, in the form of Government bonds or Surety bonds, for the protection of milk producers. During the fiscal year ending March 31, 1958, an amount of \$4,360,150.00 in the form of Government and Surety Company bonds was on deposit with the Board.

### Field Work

#### (a) *Local Fieldmen*

Local fieldmen made periodic visits to the milk distributing plants to check on the weighing, sampling and butterfat testing of milk supplied by producers as well as butterfat tests on the products sold by the distributors. In addition, a start was made on farm inspections in a number of smaller markets where no farm inspections have been made by local Departments of Health or by Health Units. In a few markets fieldmen co-operated with or supplemented quality milk programs of local municipalities or the local Health Units.

#### *APRIL 1, 1957 TO MARCH 31, 1958*

Mileage travelled .....	127,171
Composite tests of milk checked .....	17,407
Number of fresh samples tested .....	1,234
Number of tests of retail products .....	3,196
Errors Corrected .....	33
Value of errors corrected .....	\$1,175.91
Routine reports on "Milk Receiving" .....	389
Routine reports on "Milk Payments" .....	2,061
Routine reports on "Producer-Distributors" .....	150
Miscellaneous visits at farms (Including farm inspections).....	427
Miscellaneous visits at plants .....	1,449
Miscellaneous visits at others .....	568
Special complaints investigated .....	450

#### (b) *Head Office Fieldmen*

Mr. Bruce Scott, one of two fieldmen located at Head Office, resigned in August, 1957. Mr. T. G. Hicks, a local Fieldman in Thamesville, was promoted to Head Office at the end of the year. The usual investigation work was not as extensive this year due to reduced staff. Statistical data of the work follows.

## APRIL 1, 1957 TO MARCH 31, 1958

PAYMENT AUDITS:	
Routine and Follow-up .....	476
Special Audits .....	28
ERRORS CORRECTED:	
Number .....	29
Value .....	\$19,468.30
Investigations .....	56
Special Plant Calls .....	169
MISCELLANEOUS CALLS:	
Farm .....	57
Producer Associations .....	49
Distributor Associations .....	5
Other Calls .....	72
Office Calls .....	97
Meetings with Fieldmen .....	34
Special Reports .....	71
Mileage Travelled .....	19,695

## MEETINGS OF THE BOARD AND DIRECTOR, FLUID MILK DIVISION

## APRIL 1, 1957 TO MARCH 31, 1958

Meetings of the Board .....	34
Arbitrations re producer prices .....	13
Administration Hearings before the Board .....	164
Interviews with Director .....	88
Director's outside calls and field meetings .....	138

## LICENCES ISSUED

Year	Regular Distributor	Producer Distributor	Peddler	Milk Transporter	Milk Manufacturer	Shop-Keeper Distributor	Total
1934	Not Differentiated						1,335
1935	Not Differentiated						1,624
1936	647	861	87	177	28		1,800
1937	750	924	84	205	32		1,998
1938	598	850	90	220	36		1,794
1939	607	590	150	235	38		1,620
1940	610	572	129	231	40		1,582
1941	635	490	116	230	40		1,511
1942	624	440	100	182	43		1,389
1943	610	452	125	181	43		1,411
1944	615	415	72	184	46		1,332
1945	624	389	76	239	46		1,374
1946	642	346	83	264	48		1,383
1947	641	237	83	233	55		1,299
1948	630	192	86	272	53		1,233
1949	603	154	75	273	51		1,156
1950	618	137	80	261	50		1,146
1951	582	119	74	259	48		1,082
1952	578	102	84	247	44		1,055
1953	558	84	99	247	43		1,031
1954	535	80	90	251			956
1955	530	73	59	260			922
1956	532	65	54	251		1	903
1957	515	61	47	220		2	845



*FLUID MILK SALES (QUARTS) IN ONTARIO*

<i>Year</i>	<i>Yearly</i>	<i>Average Monthly</i>	<i>Average Daily</i>
1938	240,465,400	20,038,783	658,809
1939	250,406,200	20,867,183	686,044
1940	269,203,700	22,433,641	737,544
1941	290,089,400	24,174,116	794,765
1942	325,159,100	27,096,591	881,107
1943	386,644,500	32,220,375	1,059,300
1944	409,964,000	34,163,666	1,121,499
1945	432,857,000	36,071,416	1,185,909
1946	467,736,000	38,978,000	1,281,468
1947	436,459,000	36,371,583	1,195,778
1948	424,100,000	35,341,666	1,161,917
1949	433,005,000	36,083,750	1,186,315
1950	433,950,200	36,162,516	1,188,904
1951	442,319,500	36,859,958	1,211,834
1952	442,886,611	36,907,217	1,213,388
1953	460,042,200	38,336,850	1,260,389
1954	477,221,800	39,768,483	1,307,457
1955	502,009,400	41,834,100	1,375,400
1956	513,407,625	42,783,968	1,406,596
1957	535,612,000	44,634,333	1,467,430

*(From Monthly Dairy Report, Ontario Department of Agriculture)*

*COMMERCIAL SALES OF FLUID MILK,  
CREAM, CHOCOLATE DAIRY DRINK, AND BUTTERMILK  
IN ONTARIO, BY YEARS*

<i>Year</i>	<i>Fluid Milk Quarts</i>	<i>Fluid Cream Quarts</i>	<i>Chocolate Dairy Drink-Quarts</i>	<i>Buttermilk Quarts</i>	<i>Skim Milk Quarts</i>
1945	432,857,000	12,367,000	16,322,000	5,536,000	
1946	467,736,000	13,519,000	17,081,000	5,697,000	
1947	436,459,000	13,496,000	11,880,000	5,024,000	
1948	424,100,000	12,722,000	10,988,000	4,768,000	
1949	433,005,000	12,985,000	11,049,000	5,410,000	
1950	433,950,000	13,506,000	11,461,000	4,891,000	
1951	442,232,500	13,501,400	14,922,700	5,672,600	
1952	443,660,500	13,677,700	14,575,500	5,588,500	18,277,500
1953	460,042,200	14,714,300	13,848,600	6,501,200	20,740,400
1954	477,221,800	15,265,800	11,805,900	6,700,800	24,081,800
1955	502,009,400	16,068,200	14,428,500	8,006,200	27,662,100
1956	513,407,625	17,184,509	15,612,300	7,598,500	30,462,800
1957	535,612,000	17,903,200	15,072,000	8,367,500	34,924,500

**MILK PRODUCTS DIVISION****The Milk Industry Advisory Committee of Ontario**

The Committee consists of 12 members appointed by the Lieutenant-Governor in Council and 12 alternates; 6 members and 6 alternates representing dairy producer associations, 6 members and 6 alternates representing dairy processor associations.

In 1957 nine meetings were held with an average of 9.4 members or alternates in attendance. Revised and new dairy legislation was studied by the Committee and

recommendations made to the Dairy Commissioner and Minister of Agriculture. Dairy problems in general were discussed at the meetings.

Some of the recommendations made by the Committee are as follows:

1. The Committee endorsed the Sanitary Code for Milk and Cream Producers as prepared by The Milk Products Board.
2. Recommended that The Oleomargarine Act be maintained and enforced.
3. Opposed the manufacture and sale of food products resembling dairy products such as ice cream that contained no dairy products and suggested that the legal department with the Dairy Commissioner review the Edible Oil Products Act with the view of protecting the dairy industry.
4. Supported the Dairy Commissioner in his efforts to conduct a study of the composition of Ontario milk on a long term basis.
5. Recommended to the Minister of Agriculture that there be equal representation of processors and producers on The Milk Industry Board.
6. Recommended to the Dairy Commissioner that regulations pertaining to dairy products be drafted as soon as practical and that the Committee be given the opportunity to review the regulations before they are enforced.
7. Recommended that regulations be drafted to provide that all butter, cheese and edible milk powder be graded by the Government of Canada dairy product graders.
8. Owing to a shortage of trained dairy personnel in Ontario dairy plants, it was recommended that the Milk Producers' Co-ordinating Board and the Dairy Processors' Co-ordinating Board give some thought to bursaries or financial assistance to students specializing in dairying at the Ontario Agricultural College, Guelph.
9. Recommended that the Producers' Co-ordinating Board and the Processors' Co-ordinating Board appoint a committee to meet a committee from the Dairy Department of the Ontario Agricultural College to study suggestions for dairy research. The Advisory Committee is of the opinion that there is a very great need for more dairy research in all branches of the dairy industry.

#### Field Staff

The fieldmen of The Milk Products Division of the Provincial Dairy Branch are under the supervision of the Director, C. E. Lackner.

There were 35 fieldmen in 1957.

Two chief instructors supervised the work of 16 cheese industry fieldmen, who had charge of the inspection, instruction and extension of cheese factories and producers of these factories.

One Chief Instructor supervises the fieldmen in Western and Central Ontario and the other Chief Instructor supervises the fieldmen in Eastern Ontario.

Eleven fieldmen supervise the instruction, inspection and extension of creameries, processing plants and producers of these plants. These men are under the direct supervision of the Assistant Director, J. L. Baker.

One fieldman confined his activities to processing plants and producers in Eastern Ontario.

Two fieldmen in Northern Ontario supervised cheese factories, creameries and also assisted The Milk Control Board in their supervision of distributing plants and their producers.

In keeping with department policy to provide more farm service to producers of milk and cream, 5 fieldmen were appointed in 1957 to take charge of this work. Their service with producers pointed out the need for this type of work. In 1957 their service consisted largely of service calls to producers supplying poor quality milk and cream to plants. The instructions given resulted in better quality milk and cream. These fieldmen were well received by the majority of the producers who appreciated the service given.

### General

The production of cheddar cheese in Ontario in 1957 showed an increase of 7.8 per cent over that of 1956. The average wholesale price of cheese in 1957 was 33.9¢ per pound as compared with 32.4¢ in 1956 which stimulated production to some extent. During the first nine months of the year there was an increase in the production of foreign-type cheese in Ontario. Later in the season these types of cheese were imported at a price considerably below the cost of production in Ontario, which slowed up production. The production of cottage cheese, which is growing in popularity, was again well ahead of the previous year.

A new method of paying the premium on high scoring cheese was introduced by the Federal Government on July 1st, 1957. Cheese that did not pass the extraneous matter test was lowered in grade and was not eligible for the quality premium regardless of the score of the cheese. This resulted in a marked improvement in the quality of the cheese in the province.

The production of skim milk powder increased during the year. The floor price for spray powder of 17 cents and 14 cents for roller powder introduced in March, 1957, encouraged the production of this product. Several creamery operators are now purchasing whole milk as well as churning cream and have installed milk separating and milk powder equipment and are manufacturing skim milk powder as well as butter. This has resulted in a substantial increase in skim milk powder.

The production of condensed whole milk and evaporated whole milk was down 2.9 per cent and 5.0 per cent respectively, while the production of powdered whole milk was up 7.8 per cent..

The production of ice cream increased 8.4 per cent as compared with the previous year.

The production of butter was approximately 1.75% below 1956. The quality of Ontario butter again showed an improvement in 1957 over the previous year with the highest percentage of first grade butter on record. All indications point to increased sales of whole milk by producers who previously produced churning cream only. The amount of butter manufactured from milk separated at plants increased substantially in 1957 and there is every indication that this change will continue in future. This has helped to improve the quality of Ontario butter.

The floor price of 58¢ continued throughout the year with less butter purchased by the Canadian Government than the previous year. Stocks of government-held butter were substantially lower than the previous year.



## Plant Licences Issued

	1956	1957
Creameries only .....	169	165
Cheese Factories only .....	208	191
Processing Plants only .....	78	80
Milk Receiving Stations only .....	18	17
Combined Cheese Factories and Creameries .....	8	7
Combined Creameries and Milk Separating Plants .....	1	1
Combined Creameries and Processing Plants .....	44	40
Combined Cheese Factories and Processing Plants .....	4	5
Combined Cheese Factories, Creameries and Processing Plants .....	4	7
	<u>534</u>	<u>513</u>

Under the provisions of the regulations all milk and cream grading and milk and cream testing at plants must be done by persons qualified to do this work they must hold certificates of qualification. These certificates are issued when the applicant passes prescribed written and practical examinations.

## Total Certificates Issued

	1956	1957
Milk Graders .....	390	105
Milk Testers .....	546	236
Cream Graders .....	287	85
Cream Testers .....	320	96

Two series of written examinations for milk and cream graders' and testers' certificates were held in 1957 at 13 centres.

Examinations were written by 727 applicants.

Provision is made in the regulations for apprentice milk and cream graders' and milk and cream testers' certificates to be issued to persons who are new at their work, in order that they may gain experience. All grading and testing done under an apprentice certificate must be supervised by a qualified certificate holder.

## Production of Milk Products in Ontario

	1956	1957
Creamery Butter .....	79,540,000 lb.	78,177,000 lb.
Cheddar Cheese .....	56,863,000 lb.	61,311,000 lb.
Other Cheese (not including cottage) .....	6,664,000 lb.	6,748,000 lb.
Cottage Cheese .....	7,226,000 lb.	6,738,000 lb.
Ice Cream .....	12,225,000 gal.	13,289,000 gal.

## Concentrated Milk Products

	1956	1957
Condensed Whole Milk .....	14,339,000 lb.	13,926,000 lb.
Evaporated Whole Milk .....	111,902,000 lb.	106,283,000 lb.
Powdered Whole Milk .....	15,633,000 lb.	17,647,000 lb.
Condensed Skim Milk .....	3,009,000 lb.	2,812,000 lb.
Evaporated Skim Milk .....	7,053,000 lb.	6,096,000 lb.
Dry Skim Milk (Spray Process) .....	29,026,000 lb.	37,302,000 lb.
Dry Skim Milk (Roller Process) .....	9,454,000 lb.	12,733,000 lb.
Dry Buttermilk .....	3,681,000 lb.	3,729,000 lb.
Casein .....	916,000 lb.	-----
Miscellaneous Whole Milk Products Including Malted Milk, etc. ....	18,155,000 lb.	18,814,000 lb.
Miscellaneous Milk By-products Including Dried Whey, Condensed Buttermilk .....	9,278,000 lb.	18,066,000 lb.

Of the total production in Canada, Ontario produced 66.1 percent of the cheese in 1957 compared with 71.1 percent in 1956;

25.5 percent of the creamery butter in 1957 compared with 26.2 percent in 1956;

45.2 percent of the concentrated milk products in 1957 compared with 46.0 percent in 1956;

37.8 percent of the ice cream in 1957 compared with 36.8 percent in 1956.

#### Value of Milk and Milk Products in Ontario

##### (a) Farm Value of Milk Products for:

	1956	1957
Creamery Butter .....	\$ 38,201,000	\$ 38,638,000
Factory Cheese .....	16,821,000	17,418,000
Ice Cream .....	5,280,000	5,309,000
Concentrated Whole Milk Products .....	10,811,000	12,301,000
Fluid Sales .....	78,730,000	84,817,000
Farm Consumed, etc. ....	14,036,000	14,895,000
Total Farm Value .....	\$163,879,000	\$173,378,000

##### (b) Value of Milk Products:

	1956	1957
Creamery Butter .....	\$ 45,656,000	\$ 46,437,000
Factory Cheese (all types) .....	22,589,000	23,024,000
Ice Cream .....	18,383,000	19,933,000
Concentrated Milk Products .....	29,227,000	31,117,000
Fluid Sales .....	103,618,000	110,635,000
Miscellaneous Products .....	4,191,000	5,246,000
Farm Use and Sales .....	14,036,000	14,895,000
Total .....	\$237,700,000	\$251,287,000

Some 5,736 million pounds of milk were produced in Ontario 1957 compared with 5,492 million pounds in 1956.

Ontario produced 33.1% of the total Canadian milk production in 1957 as compared with 31.7% in 1956.

Approximately 92.4% of the total production of milk in Ontario is shipped to plants.

Milk (including cream converted to milk) received at plants was utilized as follows:

	1956	1957
Creamery Butter .....	36.6%	34.3%
Cheddar Cheese .....	12.3%	13.2%
Other Cheese (whole milk) .....	1.3%	1.5%
Fluid Milk .....	31.4%	32.4%
Fluid Cream .....	5.4%	5.7%
Condensed Whole Milk .....	0.6%	0.6%
Evaporated Whole Milk .....	5.4%	4.6%
Dry Whole Milk (including Malted, baby food, etc.) .....	3.0%	3.4%
Ice Cream .....	4.0%	4.3%

Approximately 30.0 per cent of the milk fat used in the manufacture of creamery butter goes into the plants as whole milk. The skim milk from this source, as well as that from the sweet cream trade, is used largely in the manufacture of dry skim milk, evaporated skim milk, condensed skim milk, cottage cheese and casein.

## Federal Grading of Ontario Butter

	<i>Total Lbs. Graded</i>	<i>% 1st Grade</i>	<i>% 2nd Grade</i>	<i>% 3rd Grade</i>	<i>% Below 3rd Grade</i>	<i>% Scoring 93 Points or Higher</i>
1956	55,421,352	97.43	2.23	0.27	0.07	20.00
1957	55,087,816	97.56	2.16	0.22	0.06	26.27

For the tenth year in succession Ontario's butter quality improved over that of the previous year. The quality in 1957 was at an all time high with an increase of 6.27% in high scoring butter over 1956.

68.89 percent of Ontario butter was graded in 1957 as compared with 70 per cent in 1956.

## Cream Quality

	<i>% Special Grade</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Off Grade (rejected cream)</i>
1956	4.94	92.83	2.19	0.04
1957	5.31	92.37	2.27	0.05

## Creamery Statistical Summary

	1956	1957
Creameries Operating .....	223	217
Former creameries reverted to cream receiving only .....	2	10
Cream producers .....	53,708	49,950
Creameries making whey butter .....	21	20
Creameries also milk distributors .....	67	64
Creameries making butter only:		
(a) with no other associated business .....	39	35
(b) with no other associated dairy business .....	117	101
Average percent cream self-delivered by producers .....	37.7	35.2
Average percent fat in cream from producers .....	33.0	32.9
Average price first grade butter (solids) .....	57.18¢	58.94¢
Average price first grade cream (milk fat net producer) .....	58.56¢	60.9¢
Approximate pounds butter made from milk to plants .....	14,525,000	23,992,000

## Buttermakers' Certificates Issued

	<i>First Class</i>	<i>Second Class</i>	<i>Temporary</i>	<i>Beginner</i>	<i>Total</i>
1956	209	2	--	22	233
1957	191	10	1	20	222

## Federal Grading of Edible Dry Skim Milk in Ontario

	<i>Total Lbs. Graded</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Below Second Grade</i>
1956	27,635,800	93.3	4.2	2.5
1957	34,155,900	94.1	3.4	2.5



## Processing Plant Statistical Summary

	1956	1957
Plants (including milk receiving stations) .....	154	150
Milk Producers .....	16,094	16,752
Average per cent fat in milk .....	3.57	3.53
Making dry milk .....	29	29
Making evaporated and condensed milk .....	15	16
Making ice cream mix and ice cream .....	100	92
Making casein .....	6	4
Average price evaporated milk per pound (case goods) .....	12.20¢	12.96¢
Average price dry whole milk per pound (spray process) .....	35.11¢	39.21¢
Average price dry skim milk per pound (spray process) .....	13.13¢	17.92¢
Average price dry skim milk per pound (roller process) .....	11.06¢	15.00¢
Average price dry skim milk per pound (animal feed) .....	7.85¢	9.28¢
Average price dry whey per pound .....	6.00¢	6.98¢
Average price dry buttermilk per pound .....	7.49¢	8.34¢
Average price casein per pound .....	23.40¢	26.62¢
Average price sweet cream per pound milk fat .....	79.67¢	82.01¢
Average price ice cream per gallon .....	\$1.50	\$1.50
Average price milk per 100 lbs. at farm .....	\$2.41	\$2.58

## Federal Grading of Ontario Cheese

	Number Boxes Graded	% First Grade	% Second Grade	% Third Grade	% Below Third Grade
Western Ontario .....	70,647	96.47	3.47	0.04	0.02
Central Ontario .....	146,774	96.13	3.76	0.10	0.01
Eastern Ontario .....	437,400	94.53	5.16	0.30	0.01
Northern Ontario .....	2,077	95.09	4.91	-----	-----
Total 1957 .....	656,898	95.10	4.66	0.23	0.01
Total 1956 .....	569,139	95.90	3.94	0.14	0.02

The following is a summary of quality scoring of Ontario cheddar cheese in 1956 and 1957:

	% 94 Score or Higher	% 93 Score	% 92 Score	% Below 92 Score (under first grade)
1956	34.48	40.71	20.71	4.10
1957	34.07	38.89	22.14	4.90

There was slightly less high scoring cheese in 1957 as compared with 1956. This was due to the lowering of the grade of high scoring cheese that did not pass the extraneous matter test.

## Cheese Factory Statistical Summary

	1956	1957
Cheese Factories Operating .....	216	205
Milk Producers .....	15,124	14,002
Factories Making Cheddar Cheese .....	202	192
Factories Making Other Types of Cheese .....	32	28
Factories Separating Whey .....	201	182
Factories Making Whey Butter .....	77	71
Average per cent fat in Milk .....	3.32	3.33
Average lbs. milk to make a pound of cheese .....	11.38	11.33
Average price per pound of cheese .....	32.67¢	33.90¢
Canada Quality Premium per pound cheese .....	0.90¢	1.04¢
Average price 100 lbs. of milk at the farm .....	\$2.43	\$2.50

**Cheesemakers' Certificates Issued**

	<i>First Class</i>	<i>Second Class</i>	<i>Temporary</i>	<i>Beginner</i>	<i>Variety</i>	<i>Total</i>
1956	158	40	12	12		222
1957	143	25	11	23	4	206

**Butter Quality Improvement Competitions and Exhibition Butter**

The Quality Improvement Competitions sponsored by The Ontario Creamerymen's Association, The Ontario Cream Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board and dairy equipment and supply companies have been a means of improving the quality of Ontario butter.

Ever since 1945 the year the competitions were started, there has been a steady improvement in butter quality with 1957 showing the highest percentage of first grade butter on record. Prizes and trophies awarded each year are valued at approximately \$1,400.00.

The Milk Products Division of the Provincial Dairy Branch in co-operation with the Department of Dairying, Ontario Agricultural College and the Dairy Products Division, Marketing Service, Canada Department of Agriculture, supervise the competitions.

The Grand Champion and Runner-Up in each of the competitions in 1957 were:

1. **QUALITY:**

The Borden Company Limited, Kemptville  
General Milk Products of Canada, Brockville

2. **YEAST AND MOLD:**

Canada Packers Limited, Mount Forest  
Tottenham Creamery Limited, Tottenham

3. **WORKMANSHIP (Composition Control):**

Canada Packers Limited, Chesley  
Teeswater Creamery Limited, Mildmay

4. **COMBINED QUALITY, YEAST AND MOLD AND WORKMANSHIP:**

Canada Packers Limited, Mount Forest  
United Co-operatives of Ontario, Wingham

5. **CREAMERY MAKING THE MOST IMPROVED OVERALL SHOWING:**

Simcoe-Grey Creameries, Flesherton  
Forest Co-operative Creamery, Forest

6. **NOVICE CREAMERIES WHICH HAD NOT PREVIOUSLY WON A PRIZE:**

Simcoe-Grey Creameries, Flesherton  
Bluevale Creamery, Bluevale

7. **HIGHEST SCORING BUTTER (CREAM RECEIVING CREAMERIES):**

Canada Packers Limited, Fort Francis  
Tavistock Cheese and Butter Company, Tavistock

8. **HIGHEST SCORING BUTTER (MILK RECEIVING CREAMERIES):**

The Borden Company Limited, Kemptville  
General Milk Products Limited, Brockville

9. **GREATEST INCREASE IN HIGH SCORING BUTTER (CREAM RECEIVING CREAMERIES):**

United Co-operatives of Ontario, Renfrew  
Palmerston Creamery, Palmerston

# 10. GREATEST INCREASE IN HIGH SCORING BUTTER (MILK RECEIVING CREAMERIES):

New Dundee Co-operative, New Dundee  
Stacey Brothers Limited, Mitchell

# 11. EXHIBITION BUTTER:

Creameries Winning Most Prizes at the C.N.E., Western Fair and Royal  
New Dundee Co-operative, New Dundee  
Briar's Dairy Limited, Sutton West

## Cheese Competitions and Exhibitions

Ontario cheesemakers again captured top honours in the competitive classes at the C.N.E., Western Fair, Royal Winter Fair, Ottawa Winter Fair, British Empire Cheese Show, Belleville and Dairymen's Association of Western Ontario.

Several Ontario cheesemakers exhibited cheese at the World's Cheddar Cheese Championship Contest at Fond Du Lac, Wisconsin, for the first time this year. This contest is sponsored by the Wisconsin Cheesemakers' Association and includes cheese from all countries where cheddar cheese is made. The Ontario makers made a very credible showing. Harold Montgomery of Monckland, Ontario, had the third highest scoring cheese on exhibit.

The major trophy winners in province-wide cheese competitions in 1957 were:

1. THE GARNET BAIN MEMORIAL TROPHY awarded to the Cheesemakers' Association whose members made the highest percentage of Extraneous Matter Free Cheese:  
Western Ontario Cheesemakers' Association
2. FRANK HERNS MEMORIAL TROPHY awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions:  
T. S. Aicken, Blanshard and Nissouri Cheese and Butter Company Limited, Belton:
3. G. G. PUBLOW MEMORIAL TROPHY awarded to the cheesemaker with the Highest Rating for Plant Sanitation and Operation:  
Roy Greenhorn, Oak Leaf Cheese Factory, Athens
4. J. P. GRIFFEN MEMORIAL SHIELD awarded to the Cheesemakers' Association making the highest percentage of First Grade Cheese:  
Western Ontario Cheesemakers' Association

## Instruction, Inspection and Extension

The following is a summary of the activities of The Milk Products Board fieldmen in 1957:

Number of visits to plants .....	6,981
Number of cans of cream examined for quality .....	40,758
Number of cans of milk examined for quality .....	194,806
Number of cans of milk examined for sediment .....	71,476
Number of tests made on milk for bacterial activity .....	30,900
Number of fermentation tests made on cheese milk .....	6,494
Number of samples of milk tested for milk fat .....	11,154
Number of adjustments made .....	165
Number of samples of cream tested for milk fat .....	14,185
Number of adjustments made .....	679
Number of milk and cream cans examined for condition .....	98,664
Number of producers visited for quality and milk fat test .....	2,755
Number of meetings attended .....	731



Dairy exhibits and demonstrations again featured many fall fairs, especially in Central and Eastern Ontario. The judging of dairy products at the fairs is largely under the supervision of The Milk Industry Board fieldmen.

The Dairy Queen Milking Competition at the Canadian National Exhibition created a great deal of interest this year with competitors from almost every county in the province. The Milk Industry Board fieldmen played a large part in coaching the competition throughout the season.

More attention was paid by the fieldmen to quality improvement of milk and cream by producer visits and at producer meetings throughout the province. They also co-operated with the Agricultural Representatives in creating interest in quality milk production among Junior Farmers and 4-H Club members.

While the quality of creamery butter is showing a gradual improvement each year, there is still need for strict supervision in cream quality. Although the cream being received at creameries is of acceptable quality, farm visits by the fieldmen indicate that considerable improvement in cream quality could be brought about by more efficient cleaning of equipment, better cooling facilities and higher testing cream.

The creameries in the province generally speaking are in good condition; good buildings, modern equipment and efficiently operated in a clean and sanitary manner. The present trend toward larger production per plant is resulting in better equipment and more economical production. The trend of creamery operators to purchase more whole milk and manufacture butter and dry skim milk has resulted in more high quality butter. This has resulted in more work for the department fieldmen to assist producers of milk, who were formerly cream producers, in quality milk production.

Because of the change in operations at many creameries, plant alterations and improvements were above average in 1957.

Van body trucks for transporting cream to creameries are on the increase and are gaining in popularity. Creamery operators using van body trucks report that the cream is received at the plants in much better condition than was possible with open trucks.

All trucks used to transport milk to plants will be required to have insulated van bodies by January 1, 1960. Many of the milk processing plants have all van body trucks. This will result in an improvement in the quality of milk arriving at the plants.

The fieldmen supervising cheese factory operations paid special attention to the quality of milk at cheese factories in 1957 in order to produce extraneous free cheese. Cheese factories are required by regulation to test milk for sediment at least twice a month. The fieldmen also did a good deal of sediment testing at the factories and checked the plants to see that sediment testing was done according to regulations.

Many cheese factory operators installed clarifiers and filters in 1957, which resulted in a marked improvement in the extraneous matter content of Ontario cheese. In 1957 Ontario made 96.4% of extraneous matter free cheese as comprised with 82.3% in 1956. Most of the poor extraneous matter tests were confined to about 5% of the factories.

Several Cheesemakers' Meetings were held in the spring of 1957, where instruction was given on making starters from low heat skim milk powder. Starters made in

this way were used by most of the factories in the province this year and were most satisfactory for cheesemaking.

The improvement in cheese factories continued this year. Several of the smaller factories were closed and replaced by modern, well-equipped plants. Although the number of factories has decreased the production per plant has increased as a result the production of cheese has not decreased materially.

The quality of milk at cheese factories is improving. Bacterial activity testing equipment is now a necessary part of cheese factory equipment and tests must be made regularly. The department fieldmen visit all producers of poor quality milk as indicated by flavor, sediment or bacterial activity tests.

Cheese factory help was again a serious problem this year. Many of the good cheesemakers have gone into other business. There are very few young men going into cheesemaking because of more lucrative wages in other lines of business. Long hours and low wages are the reasons for lack of interest in cheesemaking. Factory operators, due to shortage of help, have not been as active in milk quality control work as they otherwise would be and most of this work has been left to the fieldmen, especially in the smaller plants.

Itinerant testers are employed by many cheese factories to test milk for milk fat, as well as for sediment. Due to the shortage of help this system is still extensively used. All testing of milk for fat is checked by department fieldmen.

Cheesemakers' Clubs continued to function in 1957 in all districts in the province and were sponsored by the fieldmen. Cheese grading competitions at club meetings were featured with the assistance of the fieldmen and the Canada cheese graders. Cheese factory annual meetings were attended by the fieldmen, as it gave them a splendid opportunity to discuss milk quality production, factory conditions and production problems with producers.

## *Field Crops Branch*

Above average growing and harvesting conditions prevailed in practically all sections of the Province from before seeding until after harvest. Pastures did not suffer from extreme drought and a good hay crop was produced. Cash crops brought better than average returns, and the widespread use of recently introduced rust resistant varieties of Garry and Rodney oats meant increased yield of home-grown feed.

Total acreage of seventeen principal field crops amounted to 7,910,000 acres, an increase of 31,000. Although thirteen crops showed an increase in yield, prices in general were lower than those obtained a year earlier. Seventeen crops were down while three registered a slight increase. Total value of field crops is estimated at \$287,156,000 as against \$303,544,000 for the preceding year, a reduction of 5.4 per cent.

The trend towards larger farm units and labor-saving machinery continued, as did also part-time farm operators working in industry. The final result showing that fewer farm workers produced more in the form of meat, milk, and cash crops.

### AGRICULTURAL LIMESTONE ASSISTANCE POLICY

The use of agricultural limestone in Ontario increased from 30,174 tons in 1956 to 45,730 tons in 1957. This compares with 4,471 tons in 1939. The tremendous increase was largely caused by the increased tonnage moved by truck (35,838 tons in 1957 as compared to 19,085 tons in 1956). In the same period movement by rail decreased from 244 to 212 cars. Truck movement under the subsidy plan started in 1945, when 765 tons were moved. Several lime-spreading units now operate direct from quarry to field.

This policy has been adopted in order that ground limestone may be available to farmers at reasonable cost. It is a co-operative plan between railways with the Canada and provincial Departments of Agriculture.

The policy was revised, with new rates effective April 1, 1958:

#### Rail Transportation

1. The railway companies have agreed to reduce the standard freight tariff by approximately 25 per cent.
2. The Ontario Department of Agriculture, co-operating with the Canada Department of Agriculture, shall further reduce the cost to the farmer by paying:
  - (a) Old Ontario — 75 per cent of the reduced freight up to a maximum of \$2.50 per ton;
  - (b) Northern Ontario — 75 per cent of the reduced freight.

#### Transportation by Truck

1. The Department of Agriculture shall assist in the payment of transportation on ground limestone by truck from the approved source to the farm or



distributing centre, at the rate of five cents per ton per mile to a maximum grant of \$2.00 per ton.

2. If agricultural limestone is trucked from an approved source in Old Ontario to a destination in Northern Ontario the freight assistance shall be fifty cents per ton less than the assistance available if transported by rail.

Areas using the most limestone in 1957 were: Kent County, 7,147 tons; Welland, 5,313 tons; Lincoln, 4,165 tons; Prescott, 4,148 tons. Movement by railway was heaviest to Sudbury District, with 32 cars; Kent, 29; Middlesex, 24; Parry Sound, 21; Algoma, 11; Muskoka, 10; Nipissing, 10; and North Simcoe, 10.

The Field Crops Branch acts as a clearing house for approval of applications and also for recovery of the Federal assistance share.

## SEED DRILL SURVEY

In the spring of 1957, 672 samples of cereals and small seeds were collected from farmers during seeding operations to gain a picture of the varieties, weed content, and germination of the seed being relied upon for a profitable harvest. The samples were collected in the counties of Brant, Elgin, Essex, Haldimand, Kent, Lambton, Lincoln, Norfolk, Oxford, and Welland, and each co-operator was asked to fill in a questionnaire. The samples were analyzed by the Plant Products Division of the Canada Department of Agriculture. The survey is carried on in a different part of the Province each year. The benefits of these results can be measured only by the interest taken by the farmers and the use made to benefit their welfare.

## Comparative Results Based on Commercial No. 1 Grade

<i>Year</i>	<i>Area</i>	<i>Percentage No. 1</i>	<i>Percentage No. 2</i>	<i>Percentage No. 3</i>	<i>Percentage Rejected</i>	<i>Percentage Treated</i>
1957	Southern Ontario	55	12	13	20	78
1956	Northern Ontario	53	12	10	25	19
1955	West and South-western Ontario	59	12	9	20	69
1954	Central Ontario	53	11	13	24	60

The higher percentage of treated samples is encouraging and is perhaps due to many farmers advancing to recommended varieties and purchasing treated seed. When viewed separately and graded on a weed content only, cereals were 52 per cent No. 1 and 24 per cent Rejected, the latter mainly due to couch grass, ragweed, and wild buckwheat. Small seeds on a weed content basis were 68 per cent No. 1 and 10 per cent Rejected.

This is the eleventh consecutive season that a seed drill survey has been organized, and a system of rotation for various areas of the Province has been adopted. In this way accurate records and comparisons can be made.

## ROYAL AND INTERNATIONAL SEED SHOWS

401 prizes in field crops were won by Ontario farmers at the 1957 Royal Winter Fair. Championships were as follows:

Soybeans (Harosoy)	G. L. Clunis, Ridgeway
Field Peas (Chancellor)	Robert Joseph, Matheson
Field Beans (Sanilac)	Robert Allen, Brucefield
Hay	L. R. Bostwick, Wheatley
Turnips (Laurentian)	R. J. Pollock, Keswick

## RESERVE CHAMPIONSHIPS

Seed Potatoes .....	George Zaverucha, Dunning
Grass Seed .....	Myles A. McMillan, Dalkeith
Sweet Corn .....	Bruno Lamarche, Alfred
Soybeans .....	Shanks Bros., Wheatley
Six-Rowed Barley .....	John Hagarty, Alma
Beans .....	R. Howard Ferguson, North Augusta
Hay .....	E. Calvin Dunn, Thorndale

## CANADIAN HORTICULTURAL COUNCIL DIPLOMA FOR MOST OUTSTANDING COMMERCIAL DISPLAY OF

Potatoes .....	North Simcoe Potato Growers Assoc.
Turnips .....	Lewis Thomson & Sons, R.R. #2, Embro

At the 1957 International Grain and Hay Show, Chicago, 53 prizes went to Ontario growers. Top winners were:

Field Peas .....	Robert Joseph, Matheson
Field Beans .....	Robert J. Allen, Brucefield
Soybeans .....	William R. Beattie, Staples

## RESERVE CHAMPIONSHIPS

Field Peas .....	Roy Goltz, Falkenburg
Field Beans .....	Jack McKillop, Dutton

## REGIONAL CHAMPIONSHIP

Corn .....	Jack Mickle, Wallaceburg
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The Ontario Department of Agriculture again paid a special prize of fifteen dollars to each winner of a first prize and five dollars to the top winner from Ontario other than first. Assistance was also provided in the collection of exhibits and payment of shipping charges.

## THE ONTARIO SOIL AND CROP IMPROVEMENT ASSOCIATION

Soil and Crop Improvement Association work is now being considered a part of the farming enterprise. Each year more farmers are attending meetings, taking part in projects, testing or using new varieties, joining farm management clubs, and, in general, taking an active part in their organization. There is ample proof that this all leads to greater farm efficiency.

Fifty-six branches are organized to present firsthand information at the local level. The fact that demonstrations give results is shown by the demand for more and varied experimental work at the local level. Many farmers hesitate to follow successful experiments outlined in printed matter only, but will take a real interest in and make full use of results of work verified in the county.

Over 1,200 farmers serve as officers and directors of the Association and are responsible for setting up 630 projects as demonstrations, and organizing seed fairs, tours, and other allied work.

## Pasture Demonstrations and Competitions

These practical features, first organized in 1944, were carried on in a modified way. Seed was provided for five-acre plots in each of fifty-four counties and districts. Upon receipt of application, co-operators were reimbursed for two-thirds of the cost of fertilizer.

Four branches conducted well-organized pasture competitions, and a Provincial contest has been organized for 1958. There will be three levels; namely, county or branch, district, and provincial.

### Various Projects

The introduction and distribution of Garry and Rodney oats from hundreds of tests across the Province have proven that these two varieties are much superior in yield ability to former standard varieties. These two varieties, therefore, can increase the oat crop in Ontario by ten million bushels annually. The introduction of York barley is another indication of recent progress in crop yields by variety.

Several areas have organized soil use and land judging competitions, farm management groups, lime demonstrations, and drainage days.

Birdsfoot trefoil is being tried in an attempt to establish a hardy, persistent legume in areas where alfalfa does not thrive. High yield clubs continue as popular objective projects, with 100-Bushel Oat, 150-Bushel Corn, 500-Bushel Potato, Three-Ton Hay, etc. Results from these have been far reaching for they not only show what can be accomplished under proper management, but also set definite objectives towards efficient crop production.

A corn club in Norfolk County reports that ten high entries averaged 121.8 bushels per acre. Almost every branch has somewhat similar projects, which serve a useful purpose in constantly checking new corn hybrids.

In Renfrew County in 1955 a field was so polluted with bindweed that it produced little or no crop. After the field was sprayed with 24 ounces of 2,4-D ester at time of full bloom, it was ploughed and seeded to fall wheat. In 1956 the wheat yielded 70 bushels per acre, and the next year a volunteer crop of clover produced 300 pounds of seed, entirely free from bindweed, except one corner above a headland.

A grant to each branch organization of \$300.00 plus \$100.00 for a seed fair was made available for the year's activities.

### Goodwill Tours

These annual tours have now become established, and a large number of people look forward to these trips as an educational holiday. In 1957, 106 persons took the trip, which included distant points in British Columbia, Alaska, and the Yukon. Plans are being made for a somewhat similar, but less extensive, trip to Quebec in 1958 through the co-operation of Provincial Departments of Agriculture and the Canadian National Railways. In addition, many branch organizations arrange tours extending from one day to one week through farming sections of Ontario and parts of the United States.

### Committees

In order to facilitate the work of this organization, a number of committees are active. These include the Seed Marketing and Publicity, which, with other interests, assumes a major responsibility in recommending prices for various grades of cereal seeds, the Registered Seed Growers, which discusses the problems and promotes the interests of this particular phase of specialized farming; and the Potato and Turnip Committees, whose members give particular attention to the various aspects of these important cash crops.



### Seed Fairs

The following is a comparative summary of seed fairs:

	1957	1958
Number of Seed Shows .....	33	34
Total Prize Money Paid .....	\$10,243.64	\$11,377.05
Total Exhibitors .....	1,342	1,440
Total Entries .....	3,919	4,452
Total Attendance .....	20,442	19,940
Cereal Seed Offered for Sale .....	60,202 bus.	79,440 bus.
Forage Seed Offered for Sale .....	13,815 lbs.	33,918 lbs.
Potatoes Offered for Sale .....	1,468 bags	8,092 bags

Three district seed fairs were held, and grants made.

### High Yield Clubs

For the sixteenth consecutive year, potato clubs with an objective of five hundred bushels per acre were successfully conducted. In 1957 there was a total of 144 contestants in nine clubs. Most awards were made on the basis of quality as well as yield. Russell Thomson, Strathroy, was top winner for the Province, with 874 bushels per acre of the Sebago variety. Twenty-one growers obtained more than the objective. The club in Prescott County, with twenty-six contestants, had the highest average yield, with 506 bushels per acre.

With soybeans, there were 84 contestants in four zones as compared to 57 the previous year. Winners were:

1. Rene DeVos, R.R. No. 4, Chatham.
2. Orville Pinsonneault, R.R. No. 7, Chatham.
3. D. McLean, R.R. No. 2, Kerrwood.

This competition was organized in co-operation with two commercial organizations who purchase soybeans in large quantities.

A provincial malting barley competition attracted 55 entries, with one thousand dollars of the prize money provided by the Barley Research Institute. For this, the Province is divided into two districts, with equal prize money available. Five hundred dollars was available for highest entries, as follows:

Name	Variety	Yield in Bushels per acre	Final Score	Placing	Prize
Des Hay	Parkland	62.5	352.5	1	\$200.00
Wallace Bros.	Parkland	67	345	2	125.00
Alvin McCutcheon	Montcalm	54.6	327.1	3	75.00
Robert Sparrow	Parkland	65.7	326.7	4	60.00
Glen Rivington	Parkland	62.1	326.1	5	40.00

### Trophies and Awards

The Soil and Crop Improvement Association again made the following trophies available for encouragement of young men in field crop work:

The 4-H Grain Club Challenge Trophy (Ontario Championship); 4-H Potato Club Challenge Trophy (Ontario Championship); Silver Tray Championship in Agronomy, O.A.C. College Royal; Silver Tray Championship in Agronomy, K.A.S. College Royal; and Silver Tray Championship in Agronomy, W.O.A.S. Review Day.

### Affiliations

The Soil and Crop Improvement Association is represented on boards and committees of various organizations across the Province, many of major importance.

These include the Ontario Federation of Agriculture, Ontario Conservation Council, Advisory Fertilizer Board for Ontario, Beef Pasture Improvement Committee, Foundation Seed Distribution Committee, Canadian Potato Industry Conference, Ontario Potato Growers Association, Royal Winter Fair, Ottawa Winter Fair, Western Fair Association, and many other important committees.

### Finances

Last year \$63,190 was spent by the local branches, with average expenditures of \$1,149.00. Of this amount \$16,932, or \$305.00 per local branch, was paid as a provincial grant. Eighteen counties spent over \$1,000 on Association work. Middlesex County was most active from a financial viewpoint, with expenditures of \$10,685.00.

Branch finances show a gain for the year, with each having an average bank balance of \$410.00. One branch reported a deficit.

### WEED CONTROL

This branch has the responsibility of carrying out provisions of The Ontario Weed Control Act. Financially, this is based on fifty per cent of the amount expended by county weed inspectors and individual amounts not exceeding fifty dollars on the fifty-per-cent basis to townships in territorial districts of Northern Ontario.

Prevention and control through education and action have achieved remarkable results, but enforcement is necessary in some cases. Great progress can be noted since tractors have replaced horses for after-harvest cultivation. Spraying has now become general, and in some communities an objective of a sprayer on every farm has been established.

### Roadside Weed Control

Table I shows the approximate extent of roadside weed control — chemical and mechanical. In addition to spraying and mowing weeds and brush, seeding is practised on some newly constructed roadsides.

	1957 (Miles)		1956 (Miles)	
	<i>Sprayed</i>	<i>Mowed</i>	<i>Sprayed</i>	<i>Mowed</i>
Provincial Highways .....	7,154	-----	9,370	-----
County Roads .....	6,847	8,314	6,000	7,500
Township Roads .....	17,361	22,241	19,000	17,500
Suburban and Other Roads	1,308	2,679	-----	-----
	<hr/> 32,670	<hr/> 33,234	<hr/> 34,370	<hr/> 25,000

### Crop Damage

Restricted spraying operations because of susceptible crops reduced the amount of weed control that could be accomplished. Crop damage still occurs, but is usually the result of spraying where it should not be attempted rather than of faulty operation. Spraying prior to setting tomato plants gave satisfactory weed control in one county.

### Resistant Weeds

Milkweed is proving resistant to much roadside spraying. Wild carrot is still reported as giving poor response to 2,4-D in some areas.

### Farm Weed Control

Table II shows relative use of herbicides on farm crops.

TABLE II

	1957 <i>Acreage Sprayed</i>	1956 <i>Acreage Sprayed</i>
Grain .....	191,703	195,000
Corn .....	136,500	75,000
Pastures .....	19,159	15,500
Miscellaneous .....	9,466	12,500
Pre-emergent .....	3,050	.....
Total .....	359,878	298,000

Pre-emergent weed control on crops such as corn, soybeans, and white beans reached a significant acreage this year.

The 672 acres of corn treated pre-emergent includes a large number of one-acre demonstrations, and is in addition to the 136,500 acres of corn reported separately.

### Barberry and Buckthorn Control

The Ontario policy of assistance each year to a county on the basis of fifty per cent of the money being expended on barberry and buckthorn control has been increased to a maximum of \$500.00. This gives a county a possible \$1,000.00 a year to spend for this purpose. This year nine counties have applied for assistance in the control of barberry and buckthorn.

### Leafy Spurge

Assistance is given in the control of leafy spurge to a county of twenty-five per cent of the amount spent in any one year up to \$250.00. This year the knapweeds were included, with one county obtaining assistance in knapweed control and four counties in a leafy spurge program.

### Weed of the Week Series

This series of weekly news articles has been carried on successfully for several years. Each week of the weed season one of the most prominent weeds is described and control measures offered. This year the single column space in clippings returned from the Canadian Press clipping service totaled 355 feet from 409 clippings.

### SEED CLEANING PLANTS

The total of 441 seed cleaning plants were licensed, of which twenty-two were not for hire. This figure compares with 435 in 1956 and 453 in 1955.

These seed cleaning plants play a vital part in the economy of the farmer. A good seed preparation is profitable for the cleaner and even more so for the sower. During 1957, 203 cleaning plants were inspected so that recommendations for their improvement on the part of the operators and also the farmers could be made. Twenty-nine of the plants inspected had extra equipment for special cleaning operations, such as bumpers, sawdust coating machines, dodder mills, gravity separators, hullers, indent cylinders, and special cleaning mills for grasses.

As far as cereals are concerned, farm fanning mills soon will be a thing of the past, and with farm labor rapidly disappearing the farmer now takes the local cleaning plant as an important part of the community.



From the 203 plants visited the following observations were made:

Number cleaning cereals .....	190
Number cleaning small seed only .....	13
Number of plants using farm size mills .....	25
Number of plants with treating equipment .....	165
Number of plants that should have treaters .....	25
Number of plants using a scourer .....	133
Number of plants that should use a scourer .....	67
Number of plants using grading machinery .....	85

This year Rodney and Garry oats are presenting a problem for discs formerly set up for the older varieties of oats. Eighteen plants with treating equipment were using dust-type applicators. These machines have not proven so satisfactory as the liquid types, both from a health standpoint and the continuity of coverage.

#### ACCESSIBILITY OF ELEVATOR BOOTS FOR CLEANING

Good .....	169
Fair .....	20
Poor .....	14

Plants with vacuum or air hose for cleaning — 50

Plants equipped with exhaust fans — 16

Dust Disposal — Collection System

Box .....	88
Outside Vent .....	36
Cyclone .....	54
None .....	28

#### WEED SEED DISPOSAL METHODS

Burn .....	103
Taken Home .....	63
Ground as Feed .....	22
Questionable .....	15

157 plants had good screen racks; 46 did not have proper racks.

#### PLANTS WERE GIVEN THE FOLLOWING RATING

Excellent .....	57
Good .....	84
Fair .....	49
Poor .....	13

#### PRICES CHARGED — CLEANING AND TREATING

Cereals — Cleaning charges vary from 15 cents to 35 cents per hundredweight, grading 5 cents per hundredweight extra. This price of 25 cents to 30 cents to clean and grade appears average.

Treating charges vary from 5 cents to 10 cents per bushel. Approximately 4 to 5 cents of material is required to treat a bushel of grain, and many operators do not have fair margin on this work.

Small Seeds — Prices vary on equipment used. Cleaning charges for mill vary only from 50 cents to \$1.50 per hundredweight. Plants with special equipment charge

up to \$2.00 per hundredweight for a complete cleaning. Several plants formerly charging on clean weight are now charging the same on incoming weight to bring charges more in line with costs.

A very successful seed processors' short course was held at the Ontario Agricultural College last June, and the same is being planned for 1958. A limited number of applicants are accepted.

John Manuel, an Ontario Agricultural College graduate in Agricultural Engineering, who joined the staff on May 1, 1956, to take special charge of seed cleaning plant work, resigned effective October 1, 1957, to attend the Ontario College of Education. W. D. Taylor, former Manager, Co-operative Services, Arthur, took over the work at that time.

## POTATOES

This has been an unusual year in potato marketing in Ontario. Beginning in late winter and early spring, prices failed to take the swing upwards as experienced the three previous seasons. Literally, train loads of potatoes from United States saturated our markets. For example, on the Toronto market alone 62 carloads arrived the week of May 27; 81 the week ending May 20. This total of 143 carloads at wholesale to retail selling price would mean approximately half a million dollars on one market in two weeks, but it also meant that the effect continued to influence prices downward for many weeks to follow. When June 15 arrived, and the duty of 37½ cents became effective on new potatoes, further carloads continued to arrive. Normally, our early growers begin harvest and market operations the last part of June. In 1957 it was delayed, in the hope that imported supplies would get cleaned up. In the meantime exceptionally heavy rains (six inches in one week) fell in our early potato-producing areas of southwestern Ontario. Growers could not get on their fields, harvesting operations were delayed, production per acre doubled, quality was not up to standard, and prices went down to an unprofitable level. To make matters worse, acreage had been increased, and old stock of potatoes, particularly from the Maritimes, was available. In fact, old potatoes from the 1956 crop sold for as much as a dollar more per bag than 1957 new potatoes. This, of course, is unusual, and some carloads of old stock continued to be marketed as late as the first week of August.

Acreage of potatoes in Ontario in 1957 was estimated at 53,650 as compared to 55,100 a year ago. A total of 8,108 carloads were brought into the Province in 1957, of which 1,333 were from United States. 222 carloads were exported. 215 growers had the products of 1,626 acres of foundation and certified seed available, with Sebago the leading variety and Katahdin in second place for the first time.

A few large scale operators are enlarging their output, and there is a trend towards the use of more machinery. At least four harvesters operated in Ontario this year, each capable of harvesting about 1,600 bags in a single afternoon. Shortage and costs of suitable labor are factors causing this.

The Huron variety was licensed as seed and distributed for the first time in 1957. Over 1,000 bags of this scab-resistant variety went out to sixty-six certified seed growers, most of whom gave a report after harvest on yield, quality, etc.

The Ontario Potato Growers Association made progress. Eighteen local branches were affiliated and several resolutions submitted, of which eleven were passed and followed up. A brief was prepared for hearings of the Tariff Board and exhibits staged at three major shows.

The highlight of the year was the organization of the first Annual Canadian Potato Industry Conference held at the Ontario Agricultural College, Guelph,

August 29, 30, and 31, with a sightseeing tour on the 28th. Two hundred and seventy-six persons were registered, including representative growers, the trade and consumers, research, and administrative and extension departmental officials. The program included eighteen officials holding the degree of doctorate. This event was considered very worthwhile and an outstanding success. Invitations were received from three provinces for a somewhat similar conference in 1958.

### Bacterial Ring Rot Survey of Commercial Fields

A seasonal staff continued to provide service of field inspection without charge. This disease was found on 202 farms, involving 1,980 acres of potatoes in nineteen counties and districts. All of these growers were sent registered letters with instructions concerning disposal and clean-up under the Plant Diseases Act. By way of enforcement, it was necessary to proceed with prosecutions in seven cases, all of which resulted in convictions.

### Consumer Package Potato Survey

Ten-pound bags of potatoes were bought at retail stores throughout the Province by inspectors of the Farm Products Inspection Service and displayed at the annual meeting of The Ontario Soil and Crop Improvement Association. These were from Ontario, Prince Edward Island and New Brunswick. They were first weighed and the underweight packages removed.

The basis of judging and awards was as follows:

#### TOTAL POINTS POSSIBLE

For grade .....	80
Uniformity of size .....	10
Appearance .....	5
Package .....	5
<hr/>	
Total score .....	100

#### RANGE OF RATINGS

(1) Excellent .....	94-100
(2) Good .....	87- 93
(3) Worthy .....	90- 86
(4) Unworthy .....	below 80

Ribbons were put on the first three lots and those rating "excellent" received a Certificate of Merit.

#### RESULTS

	1957				1958			
	Ontario	Percentage	P.E.I.	N.B.	Ontario	Percentage	P.E.I.	N.B.
Excellent .....	10	16.1	1	--	2	2	2	1
Good .....	10	16.1	--	--	11	12	7	3
Worthy .....	14	22.6	2	--	12	13	5	4
Unworthy .....	28	45.2	1	2	70	73	9	9
<hr/>								
Total .....	62	100.	4	4	95	100	23	17
Underweight and not Inspected ---	9	---	4	1	17	---	8	1

More 10-pound lots were checked this year — 129 as compared to 70 last year.

### TURNIPS

All-time record prices were received for the 1957 crop and varied from 35 cents per bushel at the beginning of the shipping season to \$2.50 per bushel at the end. Large quantities were sold in the price range of 80 cents to \$1.25 per bushel to



grower. Exports amounted to 1,684,259 bushels, as compared to 1,805,074 the previous year. Domestic markets took increased amounts.

In addition to the more prevalent use of sized, treated, registered seed and the general popular acceptance of the Laurentian variety, there was increased interest in the use of precision seeders and proper precautionary measures for disease and insect control, while spraying or dusting with borax for water core has now become a part of good production practices. More growers are successfully using such chemicals as Aldrin and Heptachlor for control of maggots. Mechanical harvesters have now been perfected for practical use to save labor, and an increased number of these machines is now being used. Progress has also been made in kinds and application of wax, packaging, and new uses for turnips.

A new feature of commercial exhibits for turnips was introduced at the 1957 Royal Winter Fair, and there were six excellent exhibits, in addition to an excellent display in the regular classes.

### PEDIGREED SEED

Although Garry and Rodney oats, Genesee wheat, and Brant barley are now the popular varieties, growers are watching test plots of Fundy, Glenn, and Shield in oats, and York, Herta, Hudson, and Parkland varieties of barley. Distribution of recommended up-to-date varieties is now quickly accomplished after they have been proven. Lists of seed for sale and press releases are given wide distribution from this branch. At the most opportune periods, further information is made available by demonstrations, meetings, and press, radio, and television facilities.

In recent years an excellent export market for seed grain has been developed, with more than one million bushels of sealed seed oats and winter wheat finding an excellent market in United States. The number of registered seed growers at May 1, 1957, was 1,670, not including associates. There are now thirty elite growers, who produce and process seventeen varieties. A Foundation Seed Committee is responsible for allocating available supplies to elite and apprentice growers. Any surplus stocks are either stockpiled or sold as surplus foundation. This composed:

Kent wheat .....	840 lbs. plus 6,780 lbs. surplus foundation distributed
Genesee wheat .....	1,420 lbs. plus 1,060 lbs. surplus foundation distributed
Garry oats .....	238 lbs.
Vicar oats .....	60 lbs.
Brant barley .....	96 lbs.
York barley .....	1,272 lbs. plus 10,968 lbs. as surplus foundation and certified
Kenate barley .....	96 lbs.
Hardome soybeans .....	120 lbs.
Cumino sweet clover .....	60 lbs.
Hercules orchard grass .....	75 lbs.
Norlea perennial rye grass .....	200 lbs.
Climax timothy .....	226 lbs.
Lasalle red clover .....	100 lbs.

### Canadian Forage Seeds Project

Activity continued in co-operation with other provinces and the Canada Department of Agriculture. This committee undertakes to multiply as rapidly as possible foundation or breeder's seed of some of the widely adopted forage seed varieties up to commercial quantities. For instance, in Eastern Ontario 171,000 pounds of registered and certified Climax timothy were produced in 1957. A block of sixty growers in Moose Creek and adjacent areas produced about half of this. In addition to Climax timothy, contract agreements were made with growers for the production of Lasalle red clover, Vernal alfalfa and Erector sweet clover in Ontario.

## *Farm Economics Branch*

The Farm Economics Branch is concerned with all the business aspects of farming in Ontario whether these have to do with the management problems of individual farm units, with the methods of marketing farm products, or with the conditions of agriculture as a whole. Through detailed studies, the Branch seeks basic information that will assist in finding solutions to farm business problems as they arise.

Current economic conditions are such that many problems tend to limit the earnings of many farm operators, and a solution of these problems calls for substantial and sometimes drastic adjustments in farm management. Facts obtained from the study of thousands of farm records clearly show the relationship between management methods and earnings and indicate reasonable solutions to many of the problems involved. Substantial numbers of Ontario farmers are now using the material published by the Branch as a basis for their farm business planning with considerable advantage to their farm earnings.

The Dairy Herd Improvement program has now operated for sufficient time that these advantages can be measured over a period of years.

Each of the 1,200 members of these Associations is supplied with a yearly statement covering the returns, expenses, and earnings of his dairy herd compared with the averages for the group to which he belongs. He is also given an indication of the production factor in which his achievements are farthest below his group average as a suggestion of the production field in which improvement should have the greatest beneficial effect on his earnings

In one D.H.I.A. group where the membership has remained fairly stable over a period of years, the average net returns per herd rose from a loss of \$142 in 1950, to a gain of \$1,599 in 1957. This improvement was almost entirely as a matter of improved management as any price increases barely covered increased cash costs. Improved average achievements in some of the measurable management factors are shown below.

<i>Management Factor</i>	<i>1950</i>	<i>1957</i>	<i>Improvement</i>
Milk Production per Cow — lbs. ....	8,168	8,648	+ 6%
Number Cows per Herd — No. ....	16	29	+ 81%
Concentrate Fed per Cow — lbs. ....	2,318	1,922	+ 17%
Man Time per Cow per Year — hrs. ....	150	87	+ 42%
Milk Produced per \$100 Capital Invested — cwt. ....	10	15	+ 50%

This type of experience has greatly increased the general interest in "Farm Management" and the demand for more and more of the information the work of the Branch provides.

During the year, eight new studies were commenced and field work continued on nine others. Nine reports were issued on completed studies, eleven preliminary reports were issued, and some progress made on the analysis of the field records for ten studies.

Requests for lectures, addresses, radio talks, newspaper articles, and other extension activities have continued to increase. Subjects included the findings of

particular studies, farm management, the agricultural outlook, and similar economic topics. Advisory work was also greater than in previous years.

The Branch continues to receive the fullest co-operation of growers, producer associations, and others closely connected with agriculture. Without this co-operation, and particularly that of almost 2,000 growers, it would be impossible to obtain the large amount of accurate data required for a satisfactory study of farm problems.

The Agricultural Economics Co-ordinating Committee met regularly during the year to discuss developments in the field and to co-ordinate the program of agricultural economics research in the Province.

The vacancies on the technical staff of the Branch were filled during the year with the appointment of Frank Barnes, B.S.A., and Harry Weijs, B.S.A., M.Sc. The staff was completed with the temporary appointment of two graduate and two student assistants for the summer months.

The work of the Branch will be considered in greater detail under the following:

1. Research Activities;
2. Extension and Advisory Services.

## RESEARCH ACTIVITIES

Most of the research carried on by the Branch can be described as "development research". The purpose of each study is to obtain information, to establish worthwhile standards and measures of successful operation, and to publish these in bulletins and pamphlets which will assist farm operators to develop solutions for specific farm business problems.

Previous reports have listed 27 available publications covering completed studies. These publications deal with many aspects of cash crop, feed crop, and live-stock production costs and methods, with marketing procedures, with farm labour efficiency, and with land use. They have had good acceptance and wide distribution.

### Reports Published During the Year

#### 1. Re: *Potato Production Costs and Factors Affecting Success*

- (a) "Late Potatoes — Cost of Production Report" by F. R. Abraham
- (b) Circular No. 324 "Late Potato Production Costs" a summary

These reports cover the findings from a three-year study of late potato production in Ontario using the records from 461 crops.

#### 2. Re: *Fruit and Vegetable Marketing*

- (a) "Marketing Niagara Grapes" by E. G. Solty and J. McNally
- (b) "Norfolk County Fruit and Vegetables" by M. Palme

This was a study of production volume, marketing methods and distribution of Norfolk County products.

#### 3. Re: *Farm Management*

The joint Farm Management and Account project provides several hundred records from which current information is available on different types of farming. This information was published in the following pamphlets:

- (a) Circular #315 — "Cash Crop Farms"
- (b) Circular #316 — "Dairy General Farms"



- (c) Circular #317 — "Dairy Speciality Farms"
- (d) Circular #318 — "Beef-Hog Farms"
- (e) Circular #319 — "Poultry General Farms"

#### 4. Re: *Dairy Production*

Branch personnel prepared the cost and management sections of the report covering the year's activities of the Dairy Herd Improvement Associations.

#### Preliminary Reports and Special Pamphlets Issued

##### 1. Re: *Production Costs and Factors Affecting Success*

- (a) Peaches
- (b) Pears
- (c) Cherries
- (d) Spring Grain and Grain Corn in Zone IV — 1956
- (e) Returns from Tile Drainage — 1956
- (f) Swine 1956
- (g) Feeding Grain to Beef Cattle on Pasture — 1957

##### 2. *Miscellaneous*

- (a) Cheese Factory Operations
- (b) Problems in Marketing Niagara Fruits
- (c) Sizing-Up the Farm Business — a guide to Farm Business Analysis
- (d) Beef Ranging on Rough Pasture Land
- (e) Feeder-Pig Buying Guide
- (f) Comparative Returns from Various Livestock Enterprises
- (g) Comparative Returns from Various Types of Beef — Hog Enterprises

#### Completed Studies on which full Reports are being Prepared

For the following studies field work has been completed and the analysis of the data and completion of the reports are in various stages:

- 1. Table Turnip Production
- 2. Early Potato Production
- 3. Strawberry Production
- 4. Feed Grain Production (Corn Zone IV)
- 5. Peach Production
- 6. Pear Production
- 7. Cherry Production
- 8. Swine Production
- 9. Cheese Factory Operations
- 10. Seasonal Supplies and Prices of Niagara Fruits

#### CONTINUING STUDIES

##### Dairy Herd Improvement Association Project

Dairying is the most important farm enterprise in Ontario and a continuous record of its condition is vital to any full understanding of the Agriculture of the Province. Production and cost records are obtained on each of the 1,200 herds included in the D.H.I.A. program. These herds are located in all dairy areas and the data obtained gives a good sample of the whole industry.

This data is analysed by the Branch and forms the best known body of dairy cost information. It forms the basis of many special reports and provides much valuable material for extension work in Farm Management.

#### Farm Management and Accounting Project

The Branch, in co-operation with the Agricultural Economics Department of the Ontario Agricultural College maintains a processing centre at the College for general farm records. These records are provided by the members of Farm Management Associations and other farmers, and provide a body of data for the yearly study of farm businesses as a whole, and particularly for comparisons of different types of farming.

The co-operators are provided with statements covering their business operations and are given some help with the analysis of their operations. The data form the basis for yearly publications on types of farming.

#### Returns from Tile Drainage

For several years the Branch in co-operation with the Kemptville Agricultural School has been studying the economics of tile drainage in Eastern Ontario.

Records are being obtained each year on about 30 matched fields — one tile drained and one undrained. It is planned to carry on the project for a complete rotation period so that the results from all crops grown may be compared.

Present indications are that the extra crop yields obtained on the drained fields will more than justify the total drainage costs.

#### Winter Wheat Production

A standard cost of production study is being conducted to determine average costs for this crop and the factors affecting success. Records have been obtained for two years and the study will continue for at least another season.

#### Changes in Occupied Farm Land

The total area of occupied land in Ontario is decreasing about one million acres each census period. This abandonment is greater in some areas than in others.

A study is being conducted in five areas of the Province to determine the type of farm that is being abandoned and the reason. In each area the ownership history and a description of every farm is being obtained so that the continuing farm units and those which are no longer operating as separate farms can be compared.

#### Baby Beef Production

The Branch is co-operating with the Livestock Branch and with the "Red Triangle" beef producers in their "500 Pound Calf Club". The data obtained has provided some valuable information on this type of beef production.

### NEW STUDIES

#### Feeding Grain to Beef Cattle on Pasture

Many beef producers in Western Ontario have been supplementing the feed of their cattle on grass by feeding some grain. The aim of this procedure is to increase returns by improving the grade of their grass finished steers.

Cost records were obtained on a number of farms so that the economics of this practice might be determined. Preliminary results would throw some doubt on the profitability of the practice.

#### Beef Ranging on Rough Pasture Land

A one-call survey of those beef cattle operations using low cost rough pasture was conducted chiefly in north Victoria, Peterboro, Renfrew. The purpose of the survey was to determine the extent of this practice, the kinds, and amounts of pasture land required, and the kind of cattle used.

The practise of large operators ranging cattle on very rough pasture land appears to be declining, and those who are still conducting this type of business are generally using better land than formerly.

#### Marketing Bradford Marsh Vegetables

The markets for and distribution of produce from this important vegetable production area has never been thoroughly studied. Much of the data will be obtained from the grading statements. Work on this commenced in 1957, and will continue for a two or three-year period.

#### Price Margins of Selected Ontario Farm Produce

A continuous price series "at the farm" and at "Toronto Chain Stores" is being set up for some important Ontario farm products. Particular attention is being given to those products in which little change occurs, and for which information is not already available.

From this series it will be possible to analyse the marketing margins for more products than presently possible.

#### Crop Production Studies

Regular studies to determine production costs, and the factors affecting success were commenced with the following crops:

- (a) Hay
- (b) Soybeans
- (c) Sugar Beets
- (d) Grain Corn in Zones I and II

Plans were also made to commence an Apple Study in 1958. This study will be more comprehensive than for most crops, and will include the effect of fertilizer use based on leaf analysis. An apple marketing study is planned to be conducted at the same time.

#### EXTENSION AND ADVISORY SERVICES

The development type of research carried on by the Branch becomes of greatest value when the findings have been communicated to those who can use them in the development of their particular enterprises. This communication is by published reports, by press articles, by public addresses, and through Farm Management Schools or Associations organized by the extension personnel of the Department.



### Published Material

On the completion of each study, a full report is published. This report contains all important information obtained together with the results of the analysis of the data. It is usually published in limited numbers for the use of workers in the field and for growers and their organizations who desire such detail.

For the use of those who are interested in the main findings rather than in detail, a short summary report is usually published in sufficient quantity for general distribution.

Because of the time involved in most studies — often from three to four years — preliminary information is often of value. In these cases progress reports are made available, and particularly yearly summaries supplied to each co-operating grower comparing his results with the average for his crop for that year.

Many special reports are also prepared. These often contain an analysis of information from several studies where bringing the information together appears to have value. This type of report has particular value when different enterprises are being compared.

### Farm Business Analysis

The farm business analysis form has continued to increase in popularity as a basis of Farm Management extension and practice.

The form was revised during the year to incorporate some revised standards from recent research work, and in response to demand an instruction pamphlet was also issued.

### Short Courses and Farm Management Associations

Many county extension programs now include the keeping of farm accounts, analysing those accounts and giving some instruction in the principles of Farm Management. In some counties this work is in the form of two or three day Farm Management Schools, in others, the participants are members of definite Farm Management Associations.

This Branch and the Agricultural Economics Department at the Ontario Agricultural College co-operated in supplying instructors when such activities were organized by the Extension Branch. Twenty-six counties were visited in this program with from one to six meetings at each centre. In all, 565 farm operators received some leadership at these meetings.

### Meetings

During the year, the Director and members of the staff addressed 60 major meetings when study findings, farm management, the agricultural outlook, etc., were discussed.

Many small meetings of study groups, producers, Association executives, and other group committees were also given leadership in agricultural economic matters.

### Advisory Services

The demand for advice in farm management from individual farm operators and economic information from farm organizations is increasing steadily. These persons

call at one of the Branch offices or consult with the Director of one of the staff, when he is in a local area for a meeting or some other purpose. This individual work has a considerable impact, but its total value is difficult to assess.

#### **Farm Account Book**

Most published farm account books are not drafted for use with cash crop or fruit farms. Branch personnel worked with 14 fruit growers in the Niagara Peninsula developing a Farm Business Diary and Account Book suited to Fruit Farm Businesses.

## *Fruit Branch*

During the 1957-58 fiscal year the Fruit Branch administered The Farm Products Grades and Sales Act, The Plant Diseases Act, and applied the regulations under these Acts. Other related work undertaken included acreage surveys of the marsh areas; the testing of new produce containers; determination of suitable maturities for shipping fruits; electronic determination of color in processing tomatoes; checking of tenderometers for use in the grading of peas; setting up fruit and vegetable exhibits; compiling and publishing summaries of shipments of produce from the main production areas; obtaining weekly farm and wholesale prices for produce; Marketing Board work and variety certification.

The work was administered through six district offices under supervising Farm Products inspectors who are Agricultural graduates. These supervisors assist the industry in promoting proper methods of handling, storing, grading, packing, packaging and marking of produce being shipped for sale. A continued educational program on these aspects is applied at all marketing levels in addition to the regulatory inspection of produce at farm and shipper packing sheds, central packs, shipping platforms, inspection stations and at wholesale, retail and redistribution points.

This program has continued to pay dividends in co-operation and has played a major role in more orderly marketing of produce in Ontario. The proverb of "an ounce of prevention is worth a pound of cure" is applicable to the Fruit and Vegetable Industry. The policy of application of regulations through education and co-operation, as well as firm enforcement, has proven sound and is highly endorsed by the whole industry.

### THE FARM PRODUCTS GRADES AND SALES ACT

The administration of The Farm Products Grades and Sales Act provided for the inspection of Fresh Fruits and Vegetables, the grading of tomatoes and carrots for processing, inspection of other regulated processing crops in cases of dispute, licensing of fruit and vegetable dealers, and the inspection of honey.

#### Inspection of Fruit and Vegetables

The following compulsory inspection areas and inspection points were in operation:

<i>Compulsory Area</i>	<i>Inspection Station or Points</i>	<i>Location</i>
Essex County .....	1. Wheatly Inspection Station 2. Platforms of licensed dealers 3. Platforms of CNR & CPR 4. Blytheswood Insp. Station	#3 H'wy. 1 mi. w. of Wheatley In the area In the area Leamington Sideroad 5 mi. north of Leamington
Niagara Peninsula .....	1. Fruitland Insp. Station 2. Hamilton Municipal Market	Q.E. Way, near Fruitland Hamilton
Bradford Marsh .....	1. #11 Inspection Station 2. #400 Inspection Station	#11 H'wy. south of Bradford #400 Highway 2,200' south of County Rd. #15, York Cnty.
* All Counties and Morrison Township in District of Muskoka	1. Gravenhurst Insp. Station	#11 Highway 2 miles south of Gravenhurst

\* Gravenhurst Station does not cover any particular production area but all trucks transporting produce from Southern Ontario to Northern Ontario along #11 Highway must stop for inspection.



## Summary of Operations at Highway Inspection Stations

	Essex County		Niagara Peninsula		Bradford Marsh		Gravenhurst	
	Wheatley Station		Fruitland Station		# 11 Station		Inspection Station	
	1956-57	1957-58	1956-57	1957-58	1956-57	1957-58	1956-57	1957-58
Station Opened	June 11	June 3	June 25	June 17	July 3	June 25	Open	
Station Closed	Sept. 15	Sept. 12	Oct. 13	Oct. 12	Nov. 9	Nov. 2	Year	
Days Operated	97	102	121	118	130	131	Round	
Trucks Checked	4,250	4,456	6,247	8,495	10,563	11,648	8,808	10,280

## Inspection Within Compulsory Inspection Areas

Extensive inspection was carried out at dealers' shipping platforms, at central packs and other shipping points throughout the designated closed areas. Seasonal inspectors are employed as required during the main production season and are supervised by our permanent staff. Most of this type of inspection is done on request and certificates issued. Administrative inspection is done at express platforms, growers' packing-sheds and central packs.

## Summary of Operations — Compulsory Inspection Areas

	<i>Essex and Kent Counties</i>		<i>Niagara Peninsula</i>		<i>Bradford Marsh</i>	
	<i>1956-57</i>	<i>1957-58</i>	<i>1956-57</i>	<i>1957-58</i>	<i>1956-57</i>	<i>1957-58</i>
Growers and Packers Visited	4,301	2,133	3,811	3,859	4,346	5,531
Shippers and Wholesalers Visited	3,957	4,308	7,026	7,269	16,458	17,045
Detentions Issued	221	347	437	596	283	296
Violations Issued	2	1	19	23	23	16
Convictions Registered	2	Nil	11	13	12	7
Inspection Cert's. Issued	2,511	2,632	1,274	2,092	5,567	5,856

## Shipment of Fruit by Hundredweights from Closed Areas

<i>Commodity</i>	<i>Essex County</i>		<i>Niagara Peninsula</i>	
	<i>1956-57</i>	<i>1957-58</i>	<i>1956-57</i>	<i>1957-58</i>
Apples	9,801	11,707	12,626	8,716
Apricots	—	—	—	290
Blackberries	—	—	56	5
Blueberries	—	—	4	—
Cherries	95	142	25,238	52,846
Crabapples	—	—	43	47
Currants	6	3	268	187
Gooseberries	1	1	134	137
Grapes	81	262	248,998	126,780
Muskmelon	34,475	27,412	8	14
Nectarines	—	—	6	84
Peaches	51,416	66,347	209,299	382,860
Pears	102	158	62,021	14,893
Plums and Prunes	83	595	62,221	122,097
Quince	—	—	12	45
Raspberries	1,587	1,372	905	719
Strawberries	2,197	2,767	18,440	24,175
Watermelon	258	37	238	22
Mixed Fruit	—	—	—	12
Totals	100,102	110,803	640,517	733,929

## Shipment of Fresh Vegetables by Hundredweights from Closed Areas

Commodity	Bradford		Essex County		Niagara Peninsula	
	1956-57	1957-58	1956-57	1957-58	1956-57	1957-58
Asparagus	—	—	906	814	671	417
Beans	1,149	657	6,806	10,453	165	134
Beets	12,490	13,122	2,381	2,478	15	444
Broccoli	—	—	9	—	2	—
Brussel Sprouts	—	—	2	4	—	—
Cabbage	21,400	45,235*	62,548	83,119	76	50
Carrots	305,680	337,817*	3,438	4,564	6	26
Cauliflower	24,190	38,197	7,079	6,246	17	67
Celery	169,106	214,815	19,654	8,016	213	131
Corn	—	—	5,158	6,476	18	117
Cucumbers (F)	965	1,806	57,899	55,575	1,177	1,259
Cucumbers (HH)	—	—	55,207	94,377	115	—
Dill	—	—	—	—	1	—
Eggplant	—	—	3,370	3,083	—	8
Endive	—	—	188	5	—	—
Escaroli	—	—	163	85	—	—
Garlic	—	—	9	10	—	1
Lettuce (Head)	278,598	226,825	24,989	31,681	16	155
Lettuce (Leaf)	—	—	944	1,871	—	—
Onions	177,860	279,908	166,068	159,415	131	240
Onions (Green)	—	—	136	46	—	—
Okra	—	—	3	—	—	—
Parsley	—	—	1	16	—	—
Parsnips	9,154	13,278	6	—	—	—
Peas	171	187	37	49	106	174
Peppers	181	140	13,841	15,526	311	286
Potatoes	184,823	283,856*	369,968	433,696	240	338
Pumpkin	222	359	—	—	—	2
Radishes	5,356	3,700	2,141	1,510	—	—
Rhubarb	—	—	1,142	53	—	—
Spinach	7,340	1,982	429	2	—	—
Squash	748	982	204	303	78	16
Sweet Potatoes	—	—	16	—	—	—
Tomatoes (F)	1,987	466	196,043	173,955	53,988	46,465
Tomatoes (HH)	—	—	11,553	8,912	265	442
Turnips	—	10,724*	—	82	—	12
Vegetable Marrow	142	462	1	—	—	—
Miscellaneous	—	—	—	146	—	—
Totals	1,201,562	1,474,518	1,012,339	1,102,568	57,611	50,784

\* 1957 figures includes the highland area for Bradford, while the 1956 figures are only for marsh lands.

## Inspection Outside Compulsory Areas

In addition to service within compulsory areas, inspection of fruits and vegetables is carried out in the other main production districts, at dealer and farm packing and shipping points, at receiving and distribution points and at wholesale and retail levels throughout the Province. Where compulsory controls are applied in closed areas it is necessary to balance such control with inspection in other areas. It is interesting to note that many growers and shippers throughout the Province are requesting certificate inspection of produce before shipping. This shows a growing desire to provide properly graded and packed produce to the trade.

### Inspection at Retail Level

The Federal Department of Agriculture through Consolidated Retail Inspection Units are covering this phase in the larger centres — Toronto, Hamilton, Ottawa, and London. Retail Inspection in the areas not covered in this manner is balanced by Provincial Inspection in the other areas.

The main chain store warehouses in Toronto are covered daily on a blanket basis, who check and certify shipments going to stores throughout the Province.

Consumer complaints, roadside stands and community sales barns were dealt with by Provincial Inspectors.

### SUMMARY OF OPERATIONS 1957-58

#### Visits Made

Producers .....	14,793
Wholesalers .....	31,233
Packers and Shippers .....	28,203
Retailers .....	9,500
Markets .....	1,880
Roadside Stands and Sales Barns .....	2,859

#### Violations

Detentions Issued .....	3,860
Violations Issued .....	99
Letters of Warning .....	41
Convictions Registered .....	58
Total Fines .....	\$1,005.00
Average Fine .....	\$18.61

#### Requested Inspections

Certificates Issued .....	11,242
Blanket Inspection Forms Issued .....	9,010
Total Fees Collected .....	\$31,883.25

### GRADING AND INSPECTION OF PROCESSING CROPS

#### Tomato Grading

Tomato grading is compulsory under the regulations for all tomatoes purchased for processing. In 1957, 104 grading platforms were operating necessitating a total of 159 graders, who graded 65,502 loads of tomatoes. Fees amounting to 30¢ per ton were paid by the processors who collected 15¢ per ton from the growers. These fees cover the actual grading costs, with the Department providing the administration and supervision. The general quality of tomatoes delivered was considerably better than in the previous year.

#### Summary of Tomato Grading Operations

	1957	1956
Grading Commenced .....	August 13	August 15
Grading Finished .....	October 17	October 31
Days of Operation .....	61	77



	1957	1956
Total Graders Employed at Peak .....	159	148
Number of Receiving Platforms .....	97	86
Number of Loads Graded (Received) .....	63,884	58,203
Number of Loads Rejected .....	1,618	1,775
Average Grades for Province to October 5 ....	58.3 - 39.3 - 2.3 (1957)	
(Bulk of Crop) .....	52.3 - 44.3 - 3.3 (1956)	

### Carrot Grading

In 1957 carrots for processing were graded at the following points: Hamilton (2), Clarkson, Rexdale, Toronto, and Newcastle. Fees are collected covering the entire cost of this operation.

### SUMMARY OF OPERATIONS

Total loads received .....				791
loads rejected .....				8
		No. 1 Large	No. 1 Small	Culls
Average grades 1957 .....	71%	25%	4%	
1956 .....	70%	26%	4%	

### Other Processing Crops

Inspectors are constantly requested to inspect regulated fruits and vegetables in case of dispute and the decision of the inspector is final (covered in Marketing Agreements). All disputes were settled amicably.

### Inspection of Honey

The inspection of honey is a co-operative effort between the Federal and Provincial services. Very few troubles were encountered during the year with packers putting out an above average pack. Close contact is kept between the branch and the Provincial Apiculturist at Ontario Agricultural College.

### Licensing of Dealers

Under the regulations all dealers in fruits and vegetables must obtain a dealer's licence and windshield markers for each truck used.

A licence may be suspended or revoked (a) for failure to pay promptly any debt owing to a producer; (b) where a dealer has obtained produce by fraud or false pretenses; and (c) for failure to comply with the grading regulations.

Several cases of non-payment were referred to our office and in most cases suitable settlements were agreed upon.

During 1957 there were 940 dealer licences issued and 2,046 windshield markers.

### Acreage Surveys

Acreage surveys were conducted in the marsh land vegetable areas and are summarized as follows:—

## ACREAGE SURVEYS — MARSH LANDS

Commodity	Bradford		Kent and Essex		Thedford and Grand Bend	
	1956	1957	1956	1957	1956	1957
Beets .....	69	62	158	82	10	12
Cabbage .....	135	91	—	—	18	12
Carrots .....	1,504	1,309	102	80	442	346
Cauliflower .....	141	127	—	—	2	4
Celery .....	441	441	7	2	120	89
Cucumbers .....	—	—	—	—	11	7
Lettuce .....	1,369	1,148	6	4	235	173
Onions .....	1,592	1,598	1,235	—	127	—
— from setts .....	—	—	—	401	—	11
— from seed .....	—	—	—	766	—	—
— green bunch .....	—	—	—	—	—	1
— cooking .....	—	—	—	—	—	193
— Spanish for setts .....	—	—	—	—	—	3
Parsnips .....	45	102	—	—	—	95
Potatoes .....	1,559	1,959	106	157	488	678
Radishes .....	66	9	—	—	27	10
Spinach .....	25	3	56	51	—	—
Tomatoes .....	—	—	—	—	4	—
Turnips .....	1	5	—	—	42	15
Misc. Crops .....	16	39	2	6	37	34
Totals .....	6,963	6,893	1,672	1,549	1,657	1,683

## Plant Diseases Act 1954 and Related Work

This work may be considered under three headings:

- (1) Plant Disease Act administration.
- (2) Variety and Virus Identification Service of nursery tree fruits and raspberries.
- (3) Joint projects of survey and pesticide control with the Canada Department of Agriculture other than those under The Plant Diseases Act.

Under the Plant Diseases Act the following are provided for: apple maggot inspection, nursery inspection, bacterial ring rot inspection and municipal inspection.

## Apple Maggot Inspection

In this work the branch is responsible for the June and July inspections and co-operates with the Plant Protection Division, Canada Department of Agriculture, on the preharvest inspection. Some 114 grower applicants in 19 counties received the June and July inspections. One applicant was refused the preharvest inspection due to inadequate spray control application.

Forty-five per cent of the 113 growers receiving the preharvest inspection had orchards with some degree of apple maggot infestation. The percentage infestation was 17% below that of 1956. A late emergence of apple maggot flies in 1956 was thought to be the main cause of the higher infestation in that year.

## Plant Disease Inspection of Nurseries

Persons operating nurseries or as dealers in nursery stock must obtain a licence issued by the Fruit Branch. The normal inspection of nursery stock during the growing season was carried out under the control of the Provincial Entomologist.

The Plant Protection Division, Canada Department of Agriculture, assisted our staff in this inspection to ensure that the nursery stock was free of San Jose scale, fire blight and black knot. Infested stock was removed and destroyed. Continuing our program of advising nurserymen on pesticide control the inspectors reported on other important insects and diseases encountered during inspection.

Number of nursery licences issued .....	242
Number of dealers in nursery stock licences issued .....	58
Number of fruit tree stock inspected for plant diseases .....	1,348,154
Number of fruit tree stock with San Jose scale .....	37
Number of fruit tree stock with fire blight .....	4
Number of fruit tree stock with black knot .....	23
Number of ornamental stock inspected for plant diseases .....	3,334,647
Number of ornamental stock with San Jose scale .....	38
Number of ornamental stock with fire blight .....	nil
Number of ornamental stock with black knot .....	nil

### Bacterial Ring Rot

The enforcement of bacterial ring rot regulations is the responsibility of the Field Crops Branch. However seven Fruit Branch inspectors assisted with the inspection of premises where bacterial ring rot had been reported. This inspection normally includes the disposal of potatoes, and the disinfecting of containers, storages and equipment.

### Municipal Inspection

In 1957 three municipalities, the town of Grimsby and the townships of North Grimsby and Saltfleet, took advantage of the section of The Plant Diseases Act entitling them to appoint an inspector to check Peach Yellows, Little Peach, X-disease and Black Knot in fruit trees. Instruction was given the inspector concerned during the Summer.

### Variety Certification

There were 470,127 fruit trees checked for trueness-to-variety in 24 nurseries. Over 1,900 mixtures, or incorrectly named trees, were found or 0.4% of the total number inspected. These mixtures were either broken down or labelled. Some 133,900 rootstocks of the Malling and Malling-Merton groups were inspected for mixtures with 133 mixtures being found. Certificates of trueness-to-name for fruit varieties are issued to nurseries for the varieties that meet the specifications. For those growers interested in the information, a list of the nurserymen and the fruits certified is prepared each year.

### Raspberry Certification

Twenty-seven varieties of red raspberries were inspected for virus diseases and trueness-to-name in 18 plant growers' plantings. Two plantings were turned down because of mosaic and mixture of varieties. Certain varieties in 4 of the 16 certified plantings were refused certification because of virus and weeds.

In 1957 on request a planting of purple raspberries was certified. Due to the prevalence of virus disease in purple raspberries certification had not been given previously.

Certificates for raspberry certification take the form of a certified tag that may be attached to bundles of canes. As in past years these certified tags have been issued by the Plant Pathology Laboratory at St. Catharines based on the report of inspection



by our inspectors. Division of Plant Protection inspectors were given instruction during the course of inspection.

## PLANT DISEASE CONTROL

### Japanese Beetle

Co-operating with the Division of Plant Protection, Canada Department of Agriculture, three projects were carried out during the year. 1. Spring Japanese Beetle control program. 2. Japanese Beetle trapping and scouting during the Summer. 3. Fall Japanese Beetle control program.

As a result of trapping operations in 1956 it was decided that Japanese Beetle control must be applied in sections of Port Burwell and Hamilton. A 10% granular form of dieldrin was applied to 67 acres of turf in the two centres in late April and early May.

The Fruit Branch supplied four trap attendants to check Japanese Beetle traps set out in Windsor and Hamilton by Plant Protection officers. Additional traps were set out in Port Burwell by these same officers who kept a check on these traps themselves. These areas have had population build-ups in the past and the trapping is used as a means of identifying any resurgence. In mid-July a citizen in St. Catharines reported the Beetles on his property. Traps were set in the area and scouting was carried out. In August a small area infestation was reported in Welland.

The Fall soil treating program was based on the results of the trapping operations during the Summer. The Fruit Branch again co-operated with the Plant Protection Division in supplying staff and half the insecticide in treating a total of 38 acres in St. Catharines, Welland and Hamilton.

### Bulb and Stem Nematode

Bulb and Stem Nematode (*Ditylenchus dipsaci*) infestation was discovered in the Point Pelee Marsh around the first of August, 1957. This was the first record of this pest on a field crop in Ontario. A meeting of officials of the Canada and Ontario Departments of Agriculture resulted in recommendations for the control of the pest. The pest was listed as a plant disease in The Plant Disease Act, 1954. A survey of the Point Pelee Marsh was made by the Fruit Branch and Plant Protection officials to collect samples of setts for testing by the nematologist at Harrow. Where setts were found infested with the bulb and stem nematode these setts were confiscated and destroyed to prevent spread to non-infested properties.

### Extension

Nursery inspectors and supervising inspectors advise on insect and disease control problems on nursery stock in nurseries and home gardens under the supervision of the Provincial Entomologist.

## *Ontario Live Stock Branch*

The services rendered by the Ontario Live Stock Branch fall into two categories, namely, administrative and educational. Generally speaking, those in the former consist of enforcing or supervising the enforcement of provincial Acts and Regulations, while those in the latter feature the promotion of policies designed to encourage improvement in live stock from the standpoint of type, quality, and performance. Regardless of the classification of these services, the objective is the same: to improve the financial status of Ontario farmers engaged in live stock production.

This report is presented in two sections — administrative and educational — to discuss separately these phases of the work.

### ADMINISTRATIVE

#### Stallion Enrolment Act

Under this Act owners are required to enrol their stallions. However, before this can be done, the stallion must be inspected and approved. Those meeting the minimum standard for approval are classified by the Stallion Enrolment Board into three grades, namely, A, B, or C. Because stallions in the two top grades must be free from hereditary unsoundnesses, type and conformation are the deciding factors in determining whether a sound stallion is graded A or B. Stallions in grade C may be unsound or defective in conformation, but not both.

Stallions in the two top grades may qualify for premiums. The premium for an "A" stallion is \$3.00 and that of a "B" stallion \$2.00 for every mare left with foal. In 1957, 433 stallions were enrolled, of which 163 were representatives of the three principal heavy draught breeds, the balance being members of breeds featured at horse shows or on race tracks. One hundred and forty-nine A and 35 B stallions qualified for premiums. The total amount paid to their owners was \$12,507.00.

#### Artificial Insemination Act

The first artificial insemination unit organized to offer the services of high class sires at nominal prices began operations at Maple in 1945. Shortly after, other units were formed in various parts of the Province. Because of the tremendous impact which this system of breeding could exert on the cattle industry, legislation designed to control the operations of units was placed on the Statutes in 1947.

This Act and the regulations thereunder prescribe standards for bulls, buildings, equipment, and technicians. The actual administration of the affairs of each unit comes under the jurisdiction of a Board of Directors elected from among the members. However, officials of the Live Stock Branch make periodic inspections to assure that the high standards set forth in the regulations are being maintained.

By mutual agreement each unit in Old Ontario is providing service in a defined area. Some sell semen to units in Northern Ontario, while all contribute to the pool of frozen semen established at the Ontario Veterinary College, from the College sales are made to other units in Northern Ontario and to units in other provinces. As a result, artificial insemination services are now available to farmers in all sections of the Province, except a few very remote areas. Furthermore, the charge for the service has been maintained at the rate established in 1945, despite the fact that the cost of most other goods and services have increased very greatly since that

time. Increased volume of business, resulting in fewer miles travelled for each cow inseminated, has been the greatest factor in enabling management to maintain prices.

In 1957, 38,326 farmers bred some or all of their cows to bulls owned in licensed units. Of this number, 29,283 maintain herds that are predominately dairy, while 9,043 have herds of beef type.

The following table reveals the number of cows bred by each unit in both 1956 and 1957:

<i>Name of Unit</i>	<i>1957</i>	<i>1956</i>
Oxford and District C.B. Association .....	80,657	69,063
Central Ontario C.B. Association .....	82,074	83,093
Waterloo C.B. Association .....	58,873	53,108
Quinte District C.B. Association .....	35,083	33,670
Hamilton District C.B. Association .....	36,045	34,261
Eastern Ontario C.B. Association .....	44,432	41,585
Lambton C.B. Association .....	7,936	9,218
Essex C.B. Association .....	7,472	7,354
Temiskaming C.B. Association .....	1,329	1,391
Algoma C.B. Association .....	561	615
Thunder Bay C.B. Association .....	712	544
Rainy River C.B. Association .....	626	518
Kenora C.B. Association .....	311	59*
Cochrane C.B. Association .....	609	157*
Porcupine C.B. Association .....	100	451*
Total .....	355,051	335,087

\* Commercial operators late in 1956.

N.B. (1) The Central Ontario C.B. Association commenced operations on January 1st, 1957, as the result of an amalgamation between the Maple C.B. Association and the Toronto District C.B. Association. The figure for cows bred by the Central Ontario Association in 1956 represents the total breedings of the two former Associations.

(2) For the first time on record, A.I. services were offered to bulls of the Charolaise breed. Apparently a considerable number of farmers utilized these services, which is evidenced by the fact that 1,173 cows were bred to these bulls.

Every artificial insemination unit that produces semen is eligible for a grant equal to 33-1/3 per cent of the cost price of bulls purchased in any year, but such grant cannot exceed \$600.00 per bull. In addition, units in Northern Ontario may obtain grants on the basis of \$2.00 per cow inseminated to compensate for the higher costs of insemination.

In 1957, grants paid on account of bulls purchased amounted to \$25,080.17, while grants to units in Northern Ontario totalled \$11,674.80.

#### The Brucellosis Act

The first phase of a program designed to eradicate Brucellosis from Ontario was initiated in 1948, when the Canada Department of Agriculture offered to furnish vaccine, free of charge, to any province that would assume responsibility for distributing it to veterinarians and to make available ear tags for identifying calves and certificate forms for issuing to farmers that had their calves vaccinated.



As a result of this arrangement, veterinarians were able to reduce their charges for vaccination. The number of calves vaccinated increased yearly to such an extent that by 1952 several farm organizations were requesting that legislation of a compulsory nature be enacted. Accordingly, The Brucellosis Control Act, passed in 1953, empowered township councils to pass by-laws requiring all female calves to be vaccinated when two-thirds of the cattle owners petitioned for such action.

This legislation was quite popular at the outset, for by-laws were passed by a great many councils in 1954 and 1955. However, obstacles were encountered in 1956. The majority of farmers appeared to be in favor of vaccination, but some objected to the principal of being legislated into paying for the service. Because of the difficulty of collecting from such persons, veterinarians were reluctant to vaccinate their calves. In order to eliminate these embarrassing situations and to speed up the program, the Ontario Government agreed to assume the cost of the service by reimbursing veterinarians for services rendered in vaccinating calves in townships where the Act was in force. Before long, farmers in every township began demanding that their calves be vaccinated. Consequently the entire province was designated a supervised area on May 1st, 1957, and Ontario entered the second phase of the eradication program.

During 1957 the federal Government approved regulations providing for the establishment of Brucellosis control areas. In such areas all mature cattle are tested on condition that the reactors are sold for slaughter, with the owners being eligible for compensation at a rate not exceeding \$100.00 for pure breds and \$40.00 for grades. Although this program is administered and financed by the federal Government, the province is responsible for ascertaining the feelings of the cattle owners with regard to it. Early in 1958, educational meetings, addressed by members of the Branch, were held in Oxford and Prince Edward Counties, following which over 85 per cent of the cattle owners petitioned to have their cattle tested under this plan. Thus these two counties share the distinction of being the first ones to enter the third, and presumably the last, phase of the program.

In the meantime, calfhood vaccination is being continued, even in counties that have adopted the test and slaughter plan. The total cost of providing this service during the fiscal year was slightly over \$500,000.00, of which \$447,889.00 was paid to veterinarians for services rendered. The balance was used to cover the cost of distributing vaccine, purchasing ear tags, and providing certificates.

In 1957 the total number of calves vaccinated was 364,890.

An amendment to the Act in 1956 obligated the province to compensate owners for calves dying of shock induced by vaccination. During the year 59 claims were made, and the amount paid to claimants was \$3,885.00.

### Warble Fly Control Act

Warble fly control programs were conducted in 256 Ontario townships in 1957. Cattle owners in those townships were required to treat all cattle except those over three years of age that were free from warble grubs and calves born after September 1st of the previous year. According to reports submitted by township clerks at the end of the season prescribed for treatment, 1,380,970 cattle were treated between April 1st and 18th, and 1,356,307 cattle received a second treatment during the early part of May.

These townships were eligible for grants as follows:

- (a) 50 per cent of the cost of warble fly powder made available to cattle owners, and
- (b) 50 per cent of the salary and expenses of inspectors.

During the fiscal year, grants of \$82,680.16 were paid to these townships.

Because a considerable number of farmers have succeeded in eradicating this pest from their herds, the regulations were amended in 1958 to provide for the exemption of all cattle free from warble grubs.

### Health of Live Stock Act

This Act contains a clause which obligates every operator of a community sale to obtain a licence from the Commissioner. The conditions with which the operator must comply are set forth in the regulations. Briefly, he is required to provide adequate accommodation for live stock delivered for sale; to clean and disinfect the premises after every sale and before the next one is held; to engage a veterinarian to examine all live stock delivered and to reject any that in the opinion of the veterinarian are infected with disease; and to maintain a record of all transactions.

In 1957, licences were issued to 57 operators located between points in Glengarry on the east and Essex on the west. A member of the staff of the Live Stock Branch inspected the sale premises on several occasions during the year to see that the regulations were being observed.

These sales now occupy an important position in the marketing of Ontario's live stock. Originally organized to serve as a medium for bringing together buyers and sellers within a community, the larger ones are now attracting customers from a fairly wide area. Although a high percentage of the stock consigned at these sales consists of weanling pigs, young calves, and feeder cattle, all of which go back to farms for further feeding, slaughter cattle are now being featured at a number of them. According to a survey, at least 500,000 weanling pigs were sold through such sales in 1957, while slaughter cattle sales averaged between 2,000 and 2,500 per week.

### The Dog Tax and Cattle, Sheep and Poultry Protection Act

At the 1957 session of the legislature, the Dog Tax and Live Stock Protection Act was amended to require municipalities to compensate owners of poultry killed or injured by dogs in cases where the amount involved was in excess of 50 pounds. Accordingly, the name of the Act was changed, thereby designating the classes of live stock afforded protection thereunder.

Generally speaking, the Act is administered by municipal officials. However, any person who is dissatisfied with the award of a local valuer has the right to appeal. If an appeal is received, the Commissioner is obliged to name a valuer to investigate the case, and his award is final and conclusive.

During 1957, appeals were received from six live stock owners, all of whom had sheep killed or injured by dogs.

## EDUCATIONAL

### Federal-Provincial Pure Bred Foal Policy

When it became apparent that Ontario's heavy horse population was suffering a serious decline, the above named policy was initiated in the hope that pure bred breeders would be encouraged to breed more of their better mares. Accordingly, the federal and provincial governments have co-operated by contributing equally towards a grant of \$25.00 which is paid to the owners of approved mares of the heavy draught breeds that produce living foals sired by Grade A stallions of the same breed. Payments made in 1957 and 1958 amounted to \$1,287.50.

It is generally conceded this policy has not been instrumental in stimulating any appreciable increase in breeding over that which would have taken place otherwise. Consequently, the policy was revoked early in 1958.

### Advanced Registry Policy for Beef Cattle

This policy provides a medium for testing the performance of young bulls which appear destined to become future herd sires. The factors considered are rate and economy of gain, both of which are hereditary. Accordingly, a test station has been established on one of the farms at the O.A.C., Guelph, thus making it possible to test bulls under standard conditions. In the event of the station being filled to capacity, home tests are permitted.

These tests commence when bulls reach eight months of age and cover the 168 days following. At the end of the test every bull is classified into one of the following grades: Breeder, Commercial, or Plain. A "breeder" bull is presumed to be suitable for use in a pure bred herd; a "commercial" bull should be quite acceptable to a commercial beef producer; while a plain bull is aptly described by the word used in designating his grade.

On April 30th, 1958, after two years of performance testing, a report was published showing the results in detail, a few highlights of which are contained in the following tables.

(a)	Breed	Number of Bulls Tested	Average Starting Weight	Average Finishing Weight	Average Daily Gain	Highest A.D.G.	Lowest A.D.G.
	Angus	7	593.57	966.85	2.22	2.46	1.82
	Herefords	60	549.37	964.17	2.47	3.28	1.65
	Shorthorns	42	575.73	961.80	2.29	3.15	1.95
	Average	108	562.24	963.44	2.38	—	—

Although the Hereford bulls made slightly higher average daily gains than bulls of the other two breeds, the average final weight of the bulls of all breeds was approximately the same. This can be accounted for by the fact that bulls of the Shorthorn and Angus breeds were heavier at the time of going on test, ostensibly because they made greater gains during the nursing period.

(b)	Breed	Average feed per pound gain	High	Low
	Angus	5.70	6.49	5.14
	Hereford	5.00	6.74	3.79
	Shorthorn	5.58	6.44	3.97
	Average	5.26	—	—

### General Conclusions

(a) Within each breed there is a wide variation in bulls from the standpoint of their ability to gain on feed.

(b) There is a high correlation between rate and economy of gain, the fastest gaining bulls invariably making the most economical gains, and vice versa.

(c) There is little, if any, correlation between type and performance. Nevertheless, these two characteristics are not incompatible, hence it is possible to breed animals that have a satisfactory performance and an attractive appearance.



# Bull Premium Policy

This policy was revised in 1957 in order that due recognition might be given to bulls with performance records. Under the new policy, persons who purchase bulls approved from the standpoint of type and conformation only are eligible for premiums equal to 20 per cent of the purchase price, but not exceeding \$60.00 at a county sale or \$120.00 at the Ontario Bull Sale. On the other hand, purchasers of "performance tested bulls" may qualify for premiums equal to 33-1/3 per cent of the purchase price, but not exceeding \$200.00. In order to qualify for this designation, a bull must gain 2.30 pounds per day or better on test and be classified breeder or commercial.

During 1957-58 the premium policy applied to bulls sold in 65 sales sponsored by county or district breeders' clubs. All animals consigned in these sales were inspected by members of the staff of the Live Stock Branch, and only those approved by them were permitted to pass through the auctions. Premiums amounting to \$24,528.90 were paid to the purchasers of 525 bulls. In addition, premiums totalling \$14,376.25 were paid to the purchasers of bulls at the Ontario Bull Sale.

# The Ontario Bull Sale

This Sale, held in Toronto on March 5th and 6th under the auspices of the Ontario Beef Cattle Improvement Association, attracted 231 entries. Of this number, 8 were scratched by their owners, and 33 were rejected by the members of the Culling Committee. In the latter group, 17 bulls were sent for slaughter because the Committee members felt that they were unsuitable for use as sires. The 190 bulls sold went to buyers in 32 different counties or districts, with the largest number going to Simcoe and York, each with 17.

Prices obtained at the 1958 Sale were substantially above those paid in 1957, as shown in the following table:

Breed	Number Sold		Average Prices	
	1958	1957	1958	1957
Herefords	81	79	\$572.28	\$450.63
Angus	17	22	645.59	352.50
Shorthorns	92	72	482.07	412.71
Summary	190	173	\$535.15	\$423.64

N.B. In 1958, 14 "performance tested" bulls averaged \$698.93  
 176 approved bulls averaged \$522.13

# Demonstration Pasture Farms

It is a well known fact that beef cattle are not so efficient in converting grain into meat as their keenest competitors — hogs and poultry. However, they have the distinct advantage of being able to utilize a considerable amount of roughage in the process. Thus pasture plays an important role in the production of beef.

In 1950, therefore, the Minister of Agriculture named a Committee under the chairmanship of the Live Stock Commissioner and charged the members with the responsibility of promoting pasture improvement. In the years following, the Committee acquired, by lease, five pasture farms which have been utilized to demonstrate two recognized methods of pasture improvement: plowing up, followed by fertilizing and reseeding with approved mixtures; and rejuvenating old sod by fertilization.

During the first five years of operations, each plot on these farms was grazed in accordance with its estimated carrying capacity. Records were maintained of the costs incurred in pasture improvement and the pounds of beef produced. This data showed that, generally, pasture improvement will pay dividends and, except in cases where there is a reasonably dense sod, relatively free from weeds, that breaking up and reseeding, although more costly, is a better investment than fertilizing.

In 1957, rotational grazing was practised on four of the farms to check on the efficiency of that method as compared with that obtained from continuous grazing. Contrary to expectation, the amount of beef produced on these farms in 1957 was lower than the average production of the previous five years. Despite this finding, however, any opinions regarding the relative merits of the two methods of grazing would be premature at this time.

### Dairy Herd Improvement Policy

Under this policy the services of a dairy herd improvement fieldman are made available to the members of each association. Each fieldman spends one day per month at the farm of each member and, while there, supervises the weighing of the milk produced by each cow, collects a sample from the night and morning milking, and conducts a test to determine its butter fat content. At the end of each lactation, these data are forwarded to the Ontario Live Stock Branch, where they are used to compute the production of the cow.

Production certificates are issued for all cows that milk 182 days or more. Red or gold seals are attached to the certificates issued for cows with production in excess of certain prescribed minimums. To qualify for a red seal, a mature cow must produce 350 pounds of butter fat. If production exceeds this figure by 50 per cent, a gold seal is attached to the certificate. A summary of the results obtained in 1957 is shown in the following table:

Number of associations .....	58
Number of herds enrolled .....	1,318
Number of cows enrolled .....	28,420
Average number of cows per herd .....	22
Number of cows for which certificates were issued .....	22,201
Percentage qualifying for certificates .....	78.1
Average production per cow — milk .....	8,971 pounds
— fat .....	321 pounds
Average butter fat test .....	3.58 per cent

Information obtained from these tests is used in the sire proving program. For example the production of the two-year-old daughters of a certain bull may be compared with that of all other two-year-olds in the same herds. Under this method, environmental variations are reduced to the minimum, and thus a more accurate appraisal of the bull's breeding ability can be obtained than is possible under a system which does not take into account differences that may be attributable to feeding and management.

Because a high percentage of the members of D.H.I. Associations are using the services of artificial insemination associations, the records provide a wealth of information concerning the performance of bulls stationed in units.

In addition, the fieldmen also accumulate statistical information concerning the cost of producing milk and the returns from the dairy enterprise, which, in turn, is forwarded to the Farm Economics Branch, where it is processed and made available in report form to the member.

### Regional Shows

The policy of granting assistance to breeders' clubs to aid in staging special or regional shows was continued during the year. In the case of cattle breeders' clubs, each sponsoring organization was eligible for a grant up to \$100, equal to 20 per cent of the prize money paid out.

The following is a summary of special shows held in 1947:

<i>Breed</i>	<i>Number of Shows</i>	<i>Number of Entries</i>	<i>Number of Animals shown</i>	<i>Total Grants</i>
Holstein .....	44	5,973	4,620	\$3,997.66
Ayrshire .....	18	1,606	1,298	1,315.20
Jersey .....	18	1,738	1,297	1,287.04
Guernsey .....	13	1,166	831	1,058.40
Shorthorn .....	9	1,029	796	883.80
D.P. Shorthorn .....	1	92	70	93.00
Hereford .....	7	720	521	669.60
Angus .....	4	315	193	342.20

### Consignment Sales

Breeders' Clubs may obtain grants on the basis of \$5.00 per animal sold to assist in defraying the cost of operating a consignment sale. In order to obtain such grant, the sponsoring organization must restrict entries to animals free from Tuberculosis and Brucellosis that have been inspected and approved.

Particulars regarding grants paid in 1957 and 1958 are as follows:

<i>Breed</i>	<i>Number of Sales</i>	<i>Number of Animals Sold</i>	<i>Total Grants</i>
Holsteins .....	9	329	\$1,455.00
Ayrshire .....	2	80	385.00
Guernsey .....	4	129	645.00
Shorthorn .....	15	362	1,830.00
Hereford .....	9	260	1,300.00
Angus .....	5	175	835.00
Combined Beef Breeds ..	3	99	495.00
Red Polled .....	1	20	100.00
Dual Purpose .....	1	18	90.00
	49	1,472	\$7,135.00

### Freight Assistance to Farmers in Northern Ontario

During 1957, this policy was amended to provide for the payment of grants in aid of transportation costs in specific amounts to farmers in Northern Ontario who purchased breeding stock in Old Ontario. Regardless of the method of transportation employed, the grants are paid to the purchaser of the live stock. Most of the live stock purchased during the year were cattle and, except in the case of shipments to Northwestern Ontario, the movement was made by truck. In most cases the shipment consisted of 6 to 8 head.



Shipments upon which the purchasers received grants during the year were as follows:

Algoma .....	257
Cochrane .....	44
Manitoulin .....	230
Muskoka .....	10
Nipissing .....	133
Parry Sound .....	18
Rainy River .....	15
Sudbury .....	125
Thunder Bay .....	57
TOTAL .....	889

The majority of these cattle were milk cows, purchased by farmers engaged in the selling of fluid milk.

In addition, a number of pure bred bulls, rams, and boars were shipped to the north. In such cases the purchasers were eligible for half the express charges.

Freight assistance granted during the year amounted to \$13,008.82.

#### Assistance to Exhibitors at Shows held outside Ontario

The Ontario Swine Breeders' Association sponsored an exhibit at the National Swine Show held in conjunction with the Brandon Exhibition. Included in the exhibit were the grand champion boar, shown by Wilbur Turnbull & Son of Brussels; the junior champion boar and junior champion sow, both from the herd of Werner Romahn of Petersburg; the first prize breeder's herd and the first prize progeny of dam, shown by Gordon Schweitzer of Kitchener, the premier exhibitor of the show. To assist the Association in financing this exhibit, the Branch made a grant of \$539.34, an amount equal to 50 per cent of the transportation charges.

Ontario Holstein, Ayrshire, Jersey and Guernsey Breeders' Clubs sponsored exhibits at the International Dairy Show in Chicago, where the breeders participating brought credit and distinction to both themselves and the Province. In addition to winning many top prizes in the individual classes, Ontario stood first in the State Herd class for Ayrshires and second in this class for each of the other breeds.

Later in the year Ontario Shorthorn breeders participated in the competition at the International Live Stock Exposition, where many of their animals were placed well up among the prize winners.

Because of the high cost of exhibiting at these shows, the assistance was increased during the year. Accordingly, the sponsoring organizations received 50 per cent of the freight charges, while the individual breeders had their prize winnings supplemented by 50 per cent.

Grants including payments to breeders were as follows:

<i>Sponsoring organization</i>	<i>Total Grants</i>
Holstein-Friesian Association .....	\$2,531.28
Ontario Ayrshire Club .....	1,223.33
Ontario Jersey Cattle Club .....	1,336.52
Ontario Guernsey Club .....	784.31
Ontario Shorthorn Club .....	1,425.75

### Boar Premium Policy

This policy was revised in 1957 to give recognition to performance. As a result, only boars approved from the standpoint of type and out of dams qualified in Advanced Registry are eligible for a premium classification. Inspections are made by officers of the Branch on the farms of breeders when the boars are between six and nine months of age. Purchasers of those approved may obtain premiums which vary in amount, depending on the performance records of the parents, the maximum being \$35.00, the minimum \$25.00.

Premiums paid in 1957 and 1958 amounted to \$5,430.50.

### Bacon Hog Club Policy

When the new Boar Premium Policy was initiated, the Bacon Hog Club Policy became restricted in application to districts in which good boars are not readily available. Thus farmers who can secure good boars without too much difficulty or inconvenience are encouraged to purchase their own, while those who are not so fortunately situated may still lease one from the Live Stock Branch, provided a Club is organized. In such cases, they are required to pay a rental fee of \$15.00, which covers the period that the boar is retained by the Club. At the end of the fiscal year there were 93 clubs in the province, ten of which had been organized during the year.

### Swine Sales

During the year ten Swine Breeders' Clubs qualified for the grant of \$2.00 per head which is available to assist in defraying the cost of operating a consignment sale.

Particulars regarding these sales are as follows:

<i>Sponsoring organization</i>	<i>Number of Head sold</i>	<i>Average price</i>	<i>Grant</i>
(1) Zone 2 Yorkshire Club .....	38	\$140.06	\$76.00
(2) Grey County A.R. Club .....	22	127.77	44.00
(3) Stratford District Yorkshire Club	32	140.55	64.00
(4) Simcoe County Yorkshire Club ..	29	120.69	58.00
(5) Waterloo A.R. Yorkshire Club ..	39	152.69	78.00
(6) Wellington A.R. Yorkshire Club	26	142.78	52.00
(7) Ontario Swine Breeders' Ass'n. ....	50	149.50	100.00
(8) Zone 2 Yorkshire Club .....	44	132.26	88.00
(9) Middlesex Yorkshire Breeders .....	28	91.80	56.00
(10) Ontario Landrace Association .....	44	329.31	88.00

### Special Swine and Sheep Shows

Swine and Sheep Breeders' Associations may obtain grants to assist in financing special or regional shows. Such grants are at the rate of 25 per cent of the prize money paid out, but not exceeding \$100.00. The management of the shows comes under the direction of committees comprised of breeders residing within the area, but these committees invariably co-operate with the directors of the Agricultural Society which will undertake to act as host for the show. A summary of shows held in 1957 follows:

**Special Swine Shows**

<i>Breed</i>	<i>Number of Shows</i>	<i>Number of Entries</i>	<i>Number of Head</i>	<i>Total Grants</i>
Yorkshire .....	7	610	483	\$628.25
Berkshire .....	1	45	36	52.50
Tamworth .....	1	110	82	100.00

**Special Sheep Shows**

5	1,339	1,098	500.00
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**Ram Premium Policy**

Ontario farmers who purchase approved rams at consignment sales held under the auspices of Sheep Breeders' Clubs are eligible for premiums equal to 20 per cent of the purchase price, but not exceeding \$25.00.

During 1957 and 1958 premiums amounting to \$805.60 were paid to the purchasers of 65 approved rams.

The three Clubs sponsoring the sales at which these rams were sold qualified for grants totalling \$149.00 to assist in defraying the expenses of the sales.

**Subsidized Veterinary Services**

For the purpose of encouraging veterinarians to establish practices in the agricultural areas of Northern Ontario, the Live Stock Branch is empowered to offer grants in amounts up to \$1,600.00, on the understanding that any amount granted will be matched by local organizations. The fund so created is paid to the veterinarian on the condition that he will serve all who may have need for his services at rates agreed upon between himself and a local committee selected by the members of the contributing organizations. Thus, the farmer who lives at a considerable distance from the centre in which the veterinarian becomes located, and who would otherwise be obliged to pay a high fee, receives service at the same rate per call as the farmer who is more favorably situated.

In 1957, grants totalling \$20,133.33 were paid to local committees in 13 areas of Northern Ontario.



## *Farm Labor Service Branch*

The farm labor program in Ontario for 1957-1958 was under the supervision of a Committee named by the Minister in accordance with conditions set out in the Farm Labor Agreement between the Federal Minister of Labor and the Ontario Minister of Agriculture.

### Members of Committee

#### *Chairman:*

J. A. GARNER, Chief Agricultural Officer, Ontario Department of Agriculture  
DR. C. D. GRAHAM, Deputy Minister of Agriculture for Ontario

R. G. BENNETT, Associate Director of Extension, Ontario Department of Agriculture

B. G. SULLIVAN, Regional Superintendent, Canada Unemployment Insurance Commission

J. D. MCFARLANE, District Superintendent of Immigration, Canada Department of Citizenship and Immigration

W. DAVISON, Agricultural Adviser, National Employment Service

During the year, Mr. R. G. Bennett assumed the duties of the late Mr. J. A. Garner as Chairman of the Committee; Mr. B. G. Sullivan retired from the Federal Civil Service and was replaced by Mr. J. W. Temple; Mr. W. A. Montcalm, Director of Field Services, Ontario Extension Branch, and Mr. J. W. Drennan, Ontario Markets Branch, were added to the Committee.

The Ontario Federal-Provincial Farm Labor Committee concerns itself primarily with the formation of policies and procedures to be followed in the recruitment of farm labor. It is not active in the field of *farm placement*.

Farm conditions in the Province of Ontario during 1957, though variable from region to region, might be considered to have been quite satisfactory. In all regions an average, or better than average, crop was harvested and, with the exception of a few regions, prevailing weather conditions minimized what might have been a critical labor situation.

Southwestern Ontario experienced a rather wet spring, which necessitated later planting than usual, and a consequent shortage of available labor for a period.

During the year there was a continued trend, particularly in highly industrialized areas, toward farmers taking work in industry and allowing their farm operations to become a secondary project.

### Farm Labor Survey

Early in 1957 a survey of farm labor requirements was conducted through the Agricultural Representative Service by the Extension Branch. The results of the survey indicated there was still a demand for good year-round labor on dairy and general farms. There was a general indication that farmers were more willing to

alter their farming program and use mechanized and labor saving devices on their farms to help meet the situation, rather than depend on unskilled labor.

In general, there is a tendency today toward a larger farm unit in our general farming areas. In many cases this involves the combining of smaller farms into one operation, which makes suitable living accommodation available for married farm labor.

<i>Short-Term Placement</i>		1956	1957
Maritime Workers to Ontario .....		424	502
Western Workers to Ontario .....		30	55
Ontario Workers to Prairies .....		500	116
Tobacco Curers and Primers: U.S. to Ontario .....		3,682	4,005

<i>Day-by-Day Service</i>		<i>Female</i>	<i>Male</i>	1956	1957
Workers Placed .....		494	267	999	761
Total Days Worked .....		4,864	14,388	16,820	19,252
Number of Growers Assisted ..		—	—	76	64

The West Toronto Employment Office, which supplies day-by-day labor, is operated by a Placement Officer under the Federal-Provincial Farm Labor Agreement.

#### Southwestern Ontario Field Crop Association

This Association was formed in the late fall of 1956, made up of processors and representatives of the various commodity groups in the counties of Essex and Kent. The purpose of the Association was to attempt to improve the seasonal labor difficulty by establishing a pool maintained in camps at advantageous locations.

As work could only be provided between the months of May and October, it was originally hoped that British West Indian Workers could be used. However, arrangements were made with the Department of Citizenship and Immigration to employ Portuguese workers as a form of integration with the Immigration project. Approximately 325 Portuguese, therefore, were placed in camps at Leamington, Chatham and Wallaceburg in several drafts. Difficulties in synchronizing arrival with work are inevitable but the initial difficulties were largely overcome by rotation of workers. About 100 men left seeking other work from time to time but those who remained were very satisfactory. With this help available, together with local help which was more plentiful than for some years, the sugar beet crop was blocked and hoed and there was no necessity to recruit workers in Quebec, as was the case in 1956. Throughout the summer these men were fully employed in the area and were of great value to the fruit and vegetable growers as well as to those raising the variety of special crops which characterize that area. Most of these men were placed in agricultural and other employment for the winter by representatives of the Canada Department of Citizenship and Immigration. It is understood that the Association will repeat, and perhaps extend, this undertaking in 1958.

## *Junior Farmer Loan Branch*

The Ontario Junior Farmer Establishment Loan Corporation was transferred from the Department of the Provincial Treasurer to the Ontario Department of Agriculture on November 1st, 1956.

This Crown Company was incorporated by authority of The Junior Farmer Establishment Act 1952. The processing of loans began in October of that year.

The Act was amended in 1956 to provide that if the farmer is not eligible by reason of being over 35 years of age, the application can be made by his wife if she is between twenty-one and thirty-five years of age and a joint owner of the property.

In 1957, the Act was further amended, to reduce the maximum loan from 80% to 65% of the appraised value of the land and buildings.

The administration of the affairs of the Corporation is by a Board of Directors consisting of three members appointed by the Lieutenant-Governor in Council.

The Officers of the Company consist of the Manager, Assistant Manager, Treasurer and Secretary.

In dealing with the loan applications the Board gives careful consideration to all information concerning the applicant's integrity and farming ability, as well as the productivity of the farm, and the stock and equipment available for the operation of the property. Loans are granted to all those whom the Board feels have a reasonable chance of success and meet the requirements of the Act.

Arrears have not been a problem to date because of the Board's belief that it is not wise to allow the borrowers' payments to accumulate. A firm collection policy has been adopted with the result that there are very few in arrears.

During the fiscal year ending March 31, 891 applications were considered of which 586 were approved amounting to \$4,390,043.00. In addition approximately 150 applications were received where the circumstances did not warrant an appraisal being made or where the applicant did not comply with the Act.



## *Statistics and Publications Branch*

The Statistics and Publications Branch compiles and publishes statistics on practically all phases of Agriculture in the province. The branch works in close co-operation with the Agriculture Division of the Dominion Bureau of Statistics, Ottawa, to ensure efficiency and economy, to keep the number of forms filled out by farmers at a minimum and to help ensure uniformity of agricultural statistics across Canada. Duplication of effort is thus eliminated.

Approximately 80,000 schedules dealing with agricultural subjects are processed each year by the Statistics and Publications Branch. Dairies, creameries, cheese factories and fruit and vegetable processors are required to supply regularly statistical data on their operations. A special survey is undertaken twice each year, at June 1st and December 1st, from which estimates of acreages of field crops and live stock population numbers are made. Approximately 8,000 farmers in Ontario co-operate with the branch by completing schedules for their own farms for each of these surveys. A large corps of farm correspondents regularly return questionnaires dealing with prices of agricultural products, crop conditions, expected yields, grain remaining in storage, etc. This past year several hundred new correspondents were added to replace correspondents who had died or given up farming, and also to ensure that our coverage of all sections of the province was complete. The reports from these correspondents were supplemented by a large amount of personal correspondence. The Statistics and Publications Branch is extremely grateful to this large number of individuals and firms for their continued co-operation in statistical work.

This large number of schedules is processed by a variety of methods. Where all the producers or processors of a product are known, as for example in the case of fluid milk plants, cheese factories, processors of fruit and vegetables, etc., total figures are obtained by simple arithmetic. However, when a sample is taken at random from producers, that is, when only a percentage of the total producers report, as in the case of the June and December Surveys, more complex statistical procedures are used. These processes are handled with the greatest care so that the final estimate will be as accurate as possible.

This past year the branch commenced a continuing study of the distribution of marketing margins between the price the farmer receives for his product and the price paid by the consumer at the chain retail stores in Toronto.

### **Reports Published**

All statistical information gathered is published in one of four regular reports issued by the branch. These are the Monthly Crop and Live Stock Report, the Monthly Dairy Report, the Seasonal Fruit and Vegetable Report and the branch's annual report — Agricultural Statistics for Ontario. These reports are distributed free of charge to anyone asking to have his name and address placed on the mailing list.

The Monthly Crop and Live Stock Report is published each month from May to January inclusive. It contains timely information on a county basis relating to acreage of crops, progress of seeding, development during the growing season, yields obtained, live stock numbers, current prices obtained by farmers for their produce, weather data and other related material.

The Monthly Dairy Report, together with a March Supplement, contains statistics relating to various phases of the dairy industry. Monthly schedules are obtained from all creameries, cheese factories, dairies, ice cream manufacturers and concentrated milk plants, showing the quantities of various dairy products made and handled during the month. Tables are prepared from these schedules showing for Ontario the production, by county, of creamery butter and cheddar cheese, the sales by market area of fluid milk and cream, chocolate dairy drink, buttermilk and skim milk, and a provincial total only for the output of condensed, evaporated and powdered milk products. Other tables show the average monthly wholesale price of butter and cheese and stocks on hand at the first of each month at Toronto and the prices charged farmers for dairy feedstuffs at London and Ottawa.

The Seasonal Fruit and Vegetable Report is published monthly during the growing season. Preparation of material for this report was previously done by the District Inspectors in Ontario of the Dominion Fruit Branch. This year it became the responsibility of this branch. The province has been divided into fifteen regions each having a small statistics committee consisting of Dominion and Provincial Government officials who meet on the fifteenth of each month and make up a summary of crop conditions and production prospects for their respective areas. From these regional reports, a summary for the province is prepared by the staff of the Statistics and Publications Branch and then submitted for revision and approval at a monthly meeting of the Ontario Fruit and Vegetable Statistics Committee which at the present time is composed of the following members:

Jas. M. Gray, Head, Special Crops Section, Agricultural Division, Dominion Bureau of Statistics, Ottawa

E. A. Walton, District Supervisor, Dept. of Agriculture, 35 Station St., Belleville

C. W. Jackson, District Supervisor, Dept. of Agriculture, Box 520, Main Post Office, Hamilton

R. E. Goodin, Assistant Director, Field Crops Branch, Ontario Dept. of Agriculture, Toronto

G. F. Perkin, Marketing Commissioner, Ontario Dept. of Agriculture, Toronto

D. E. Williams, Associate Director, Fruit Branch, Ontario Dept. of Agriculture, Toronto

S. H. H. Symons, Director, Statistics and Publications Branch, Ontario Dept. of Agriculture, Toronto

### Annual Statistics Report

The Annual Statistics Report contains the latest yearly figures of production for all phases of farming and is designed to show a statistical picture of the agricultural situation in Ontario. The first part of this report shows the gross value of production and cash income from farming operations, prices received for farm produce and estimates of fruit and vegetables and dairy production. The second part shows the acreage, production and value of field crops by county division. The third part shows the estimated number and value of each class of live stock on farms by county. There are also sections showing chattel mortgages outstanding, detailed weather data, together with a summary of crop production and live stock numbers yearly for the period from 1902 to date. During the past year additional data has been included in the Annual Statistics Report relating to the monthly average price per 100 pounds received on Public Stock Yards, Toronto, for good slaughter steers, good and choice veal calves, hogs B1 dressed, good lambs and good stocker and feeder steers. In

addition, intercensal revisions for the years 1951 to 1956 have been published for live stock numbers.

This branch also is responsible for the printing and distribution of Department of Agriculture reports, bulletins and circulars. Single copies of these publications are available, without charge, to residents of Ontario. A small charge is made to non-residents and to residents wishing bulk lots of any one bulletin or circular.

### Publications Committee

Since 1944 a Departmental Publications Committee, appointed by The Minister, has been responsible for recommending policy changes and supervising procedures in the preparation of manuscripts and distribution of publications.

### Committee Membership 1957

Dr. C. D. Graham, Deputy Minister  
 Dr. J. D. MacLachlan, President, Ontario Agricultural College, Guelph  
 Dr. T. L. Jones, Principal, Ontario Veterinary College, Guelph  
 Dr. W. H. Upshall, Director, Horticultural Experiment Station, Vineland  
 J. C. Steckley, Director, Western Ontario Agricultural School and Experimental Farm, Ridgeway  
 A. M. Barr, Principal, Kemptville Agricultural School  
 W. P. Watson, Live Stock Commissioner  
 T. R. Hilliard, Director of Extension  
 A. H. Martin, Director, Field Crops Branch  
 Miss H. M. McKercher, Director, Home Economics Service  
 S. H. H. Symons, Director, Statistics and Publications Branch  
 F. M. Baker, Director of Publicity  
 Chairman: J. A. Garner, Chief Agricultural Officer

At the close of the fiscal year 1957, the statistics section of the Statistics and Publications Branch was amalgamated with the Farm Economics Branch to form the Farm Economics and Statistics Branch. The publications work of the branch was transferred to a newly formed Information Branch.

During the fiscal 1957 the following literature was printed:

Annual Reports	No. of Copies
The Report of the Minister of Agriculture .....	2,000
The Entomological Society of Ontario .....	1,500
The Ontario Horticultural Societies .....	3,000
The Ontario Agricultural Societies .....	3,000
Report of the Ontario Agricultural School and Experiment Farm .....	800
The Ontario Soil and Crop Improvement Association .....	10,000
The Ontario Plowmen's Association .....	1,000
Report of the Ontario Veterinary College .....	2,300
Report of the Stallion Enrolment Board of Ontario .....	800
Agricultural Statistics for Ontario .....	6,700
Calendar of the Kemptville Agricultural School .....	2,750
Biennial Report of the Horticultural Experiment Station .....	10,000



**Bulletins***Serial  
No.*

456	Dwarf Apple and Pear Trees .....	10,000
466	Salads All the Year Round .....	5,000
468	Canning Ontario's Fruits and Vegetables .....	5,000
479	Supper Dishes .....	5,000
503	The Raising of Guinea Pigs, Hamsters, Rats and Mice .....	2,000
520	Modern Milk Houses .....	2,500
521	Farm Home Surroundings .....	10,000
522	Insects Attacking Vegetables .....	8,000
523	Lime Acid Soils for Better Yields .....	12,000
524	Common Grain Smuts and Their Control .....	10,000
525	Bovine Mastitis .....	10,000
526	Greenhouse Vegetable Production .....	2,000
527	Ontario Laying Flock Management .....	10,000
24	Soil Survey Report — Glengarry County .....	2,000
25	Soil Survey Report — Victoria County .....	3,000

**Extension Circulars***Serial  
No.*

75B	Guide to Chemical Weed Control in Horticultural Crops .....	11,000
75D	Guide to Herbicides in Chemical Weed Control .....	8,000
174	Avion Leukosis .....	2,000
212	Pest Control Chart for Ornamentals in the Home Garden .....	5,000
243	Poison Ivy .....	10,000
296	Field Crop Recommendations for Ontario 1958 .....	25,000
303	Fertilizers for Fruit Crops .....	10,000
304	Fertilizer Recommendations for Cereal Hay and Pasture Crops .....	20,000
313	Mist Propagation .....	3,000
324	Late Potato Production Costs .....	10,000

**Publications of The Department**

"Poultry" .....	5,000
"Eggs" .....	10,000

## *The Ontario Telephone Authority*

The Ontario Telephone Authority was organized under the provisions of The Telephone Act, 1954. It is charged with administration of the Act, together with the responsibility of providing technical advice and assistance to the independent telephone systems which come within its jurisdiction, with the end in view of improving telephone service in the Province, particularly in the rural areas. Although independent systems operate less than ten per cent of all telephones in Ontario, it is estimated that they operate approximately one-half of all rural telephones and are, therefore, an important factor in the life of many agricultural communities.

### ORGANIZATION

The Authority organization consists of three members (one of whom acts as Branch Director), the Secretary, and a staff of thirteen divided between the Engineering and Commercial Departments. Regular meetings are held by the Authority at which time, matters brought before it under the provisions of the Act, are given consideration and, where applicable, Orders are issued reflecting the decisions which have been reached. In most cases, the staff of the Authority makes a preliminary investigation and prepares the information on which a final decision is based.

### ORDERS

During the past year (April 1, 1957 to March 31, 1958) a total of 126 Orders were issued as follows —

#### Summary of Orders

For approval of sale of municipal systems and distribution of assets .....	7
For an Order prescribing date for holding annual meeting of subscribers .....	8
For approval of By-laws of telephone companies .....	16
For approval of agreements for interchange of service .....	11
For approval of sale of telephone companies .....	17
For approval of telephone charges .....	56
For approval of free service .....	1
For authority to establish, provide and maintain a depreciation fund .....	2
For authority to issue stocks, bonds, or other evidence of indebtedness .....	6
For approval of cancellation of a previous Order .....	2

126

#### Technical Advice and Assistance

Many of the independent systems in Ontario have, over the years, neglected to replace plant and equipment on a continuing basis and now find themselves faced with the necessity of rebuilding worn out plant and modernizing existing plant at today's greatly inflated prices. Most of the small systems, even if they can arrange the necessary financing, do not have the technical personnel to plan and design the installation of new equipment and supervise its construction.

The Engineering Department of the Authority provides maintenance advice through regular visits of its field representatives and one engineering assistant is employed full-time on actual "on the job" training of line personnel. In addition to this, assistance is provided in many instances where major building projects are undertaken by independent telephone systems. This assistance usually takes the form of conducting a preliminary field survey to determine plant requirements, a commercial study to establish that the project is economically sound, the issue of specifications covering the necessary new equipment and, finally, the supervision of construction.

The following is a summary of some of the activities of the engineering staff during the past fiscal year —

<i>Item</i>	<i>Number</i>
New central offices activated: Dial .....	5
Manual .....	3
(One of the above dial offices serves previously unserved territory.)	
Dial private branch exchanges (Industrial) activated .....	2
Specifications for new central offices issued .....	5
Outside plant plans issued .....	16
Outside plant and central office plans in final preparation for issue .....	6
Requirement or technical surveys completed or underway, including plant evaluations (by exchange areas) .....	18

No attempt has been made to record technical plans of a lesser scope issued, nor to detail a number of coordinating meetings, etc., with other utilities and with manufacturers' agents on behalf of various telephone systems, although these efforts occupy an increasing amount of staff time. Neither have we recorded the attendances of field and office staff upon telephone system officials, public officials and at public meetings, although such activities are becoming increasingly frequent and solicited as our existence becomes more well known.

## COMMERCIAL ACTIVITIES

A large portion of the work of the Commercial Department consists of answering queries received both by mail and in person from the various systems, concerning proper procedures to follow when they wish to take action under the provisions of The Telephone Act, 1954, the Corporations Act, 1953, and The Municipal Act.

Under The Telephone Act, 1954, a telephone system must apply to the Authority for an Order of approval before a by-law, schedule of rates, or certain aspects of the physical or financial set-up of the system can legally be changed. The Commercial Department prepares the information on which the Authority bases its decision as to whether or not the action should be approved.

In the case of an application for an Order approving the sale of a system, or a part thereof, an investigation must be made to determine that a future merger or other desirable developments will not be prejudiced. The studies of various merger possibilities require cost figures and revenue forecasts and the Commercial and Engineering Departments combine in providing this information.

In the case of an application for an increase in rates, a study must be made both to determine that the rates are reasonable from the standpoint of the telephone users, and that they are adequate for the needs of the system concerned. In some cases, proposed rates have not been approved in the first instance because they were too low, and the system has been shown that it must have a certain revenue in order to provide proper service and that a more realistic rate schedule should be established.



In addition to the foregoing, the Commercial Department is prepared to assist telephone systems with general business and accounting advice. The staff is qualified to instruct the Secretaries of systems in improved bookkeeping methods and assist them to establish new systems of records. This assistance has been particularly appreciated where a new Secretary or Manager has been appointed and depends on us for his training. During the year just past, in addition to helping many of the telephone companies with routine accounting problems, seven companies installed complete new bookkeeping systems under our direction. This generally required an initial visit of several days with regular follow up calls to make sure the system was operating properly.

The Commercial Department also collects and checks the "Telephone Statistics" reporting form on which all systems make an annual return to the Dominion Bureau of Statistics and to this Authority. These returns are used extensively in analysing the problems of individual systems as well as in preparation of the annual publication "Summary of Statistical Returns from Telephone Systems" which is widely used by the telephone systems themselves, equipment suppliers and others interested in the telephone industry.

## SUMMARY OF STATISTICS

Complete returns for the calendar year 1957 are not available at the date of publication of this Report but detailed statistics on individual systems will be contained in the "Summary of Statistical Returns from Telephone Systems" which is mentioned above and which will be published later in the year.

As at January 1, 1957, there were 370 independent telephone systems within the jurisdiction of Ontario. These systems operated approximately 176,000 telephones of which 25% were dial and 75% manual.

During 1957, 24 independent systems, operating 8,650 telephones ceased to operate or were sold to other telephone systems. At January 1, 1958, therefore, there were 346 remaining independent systems reporting to this Authority. It is assumed that natural growth of the remaining systems will result in the total number of operated telephones remaining approximately the same despite the fact that most of these sales were made outside the independent field.

## Sales

The following seven systems gave up business during 1957 and their areas will now be served by the Bell Telephone Company of Canada. Usable plant has been retained and the remainder of their lines has been reconstructed to modern standards.

<i>Name</i>	<i>Address</i>	<i>No. of Phones</i>
Barrie Angus Telephone Co. Ltd. ....	Barrie .....	110
Belmont Municipal Telephone System .....	Havelock .....	173
Golden Rule Telephone Co. Ltd. ....	Blind River .....	14
Lambton Telephone Co. Ltd. ....	Sombra .....	220
Mono Farmers Telephone Co. ....	Alliston .....	4
Parkhill Arkona Telephones Ltd. ....	Arkona .....	144
Stormont Telephone Co. Ltd. ....	Aultsville .....	35

Seventeen additional systems were sold to larger telephone companies and their operation will be integrated with that of the new owners.

<i>Name</i>	<i>Address</i>	<i>No. of Phones</i>	<i>Sold to</i>
Alberton Municipal Telephone System .....	Fort Frances ..	88	Bell Telephone Company
Algoma Central Telephone Co. Ltd. ....	Wawa .....	495	Northern Telephone Co. Ltd.
Apsley Telephone Co. Ltd. ....	Apsley .....	29	Bell Telephone Company
Beeton Telephone Co. Ltd. ....	Beeton .....	1,006	Bell Telephone Company
Brechin Telephone System .....	Brechin .....	31	Bell Telephone Company
Cavan Rural Telephone Co. Ltd. ..	Cavan .....	90	Docon Telephones Ltd.
Emo Municipal Telephone System .....	Emo .....	280	Bell Telephone Company
Fort Frances Municipal Telephone System .....	Fort Frances ..	2,792	Bell Telephone Company
Goderich Rural Telephone Co. Ltd. ....	Dungannon ....	596	Huron and Kinloss Municipal Telephone System
Harvey Municipal Telephone System .....	Lakehurst .....	68	Bell Telephone Company
Martintown Telephones .....	Martintown ....	292	Bell Telephone Company
McNab Telephone Co. Ltd. ....	White Lake ....	195	Bell Telephone Company
Mount Albert Telephone Co. Ltd. ....	Mount Albert ..	1,048	Bell Telephone Company
Saginaw Telephone Co. Ltd. ....	Cannington ....	11	Bell Telephone Company
Sandwich South Municipal Telephone System .....	Maidstone ....	484	Bell Telephone Company
Upper Admaston Rural Telephone Co. Ltd. ....	Douglas .....	17	Davis Telephone Co. Ltd.
Waterloo Municipal Telephone System .....	Breslau .....	420	Bell Telephone Company

Two Orders were issued during the year to approve change of ownership. The systems concerned will, however, continue to operate as separate entities. The Elmwood Telephone System at Elmwood, operating 176 telephones, was sold to Mr. Arthur Wepler of that town. Ownership of the Chinguacousy Municipal Telephone System, operating 1,132 telephones in the vicinity of Brampton, was transferred to the Township and the system will be operated as a Public Utility under Part I of The Telephone Act, 1954, until negotiations for its sale to the Bell Telephone Company of Canada are completed.

One sale of a portion of a telephone system was made during the year. The Kenora Municipal Telephone System sold that portion of its plant located in the rural municipality of Jaffray-Melick to Norwesto Communications Ltd. The new owners plan to install a modern dial system to serve this area.

In addition to the above completed transactions, arrangements have been made for the sale or overbuild during 1958-59 of an additional 14 systems operating approximately 1,800 telephones. Each case has been studied individually by the Authority and an Order has been issued approving the action.

Preliminary negotiations are underway for the sale or overbuild of 38 further systems although final Order of approval has not yet been issued by the Authority. In many cases, however, the Authority has been called upon to make a study of the situation and assist the system concerned to determine the best course of action. These 38 systems operate approximately 6,100 telephones and it is anticipated that the sale or overbuild of most of them will be completed within the next five years.

### Organization of Systems

The independent telephone systems in Ontario may be divided into four classes according to type of ownership. The 346 systems operating at the beginning of 1958 are organized as shown in the following table which also shows the number of telephones in each of the groups as of January 1, 1957.

Type of Ownership	Systems		Telephones	
	No.	%	No.	%
Systems operated as Public Utilities by Municipal Corporations .....	9	2.5	37,744	22.5
Municipal Systems .....	80	23.0	38,940	23.0
Systems owned by Incorporated Telephone Companies ....	223	64.5	85,275	51.0
Systems owned by Individuals or Partnerships .....	34	10.0	5,451	3.5
	<u>346</u>	<u>100.0</u>	<u>167,410</u>	<u>100.0</u>

### Size of Systems

The relative size of the independent telephone systems is also of interest. The following table indicates the size of systems operating in Ontario as at January 1st, 1958, and also shows the split between connecting companies and service station systems. "Connecting companies" are those which operate a complete telephone plant including switchboards, while "service station systems" provide only the telephone and line facilities which connect their subscribers with another company's switchboard and they must pay a switching charge for such connection.

No. of Telephones Operated	Connecting Companies		Service Station Systems		Total	
	No.	%	No.	%	No.	%
1 - 10 .....	1	.5	18	11.0	19	5.5
11 - 25 .....	1	.5	58	36.0	59	17.0
26 - 50 .....	6	3.5	39	24.0	45	13.0
51 - 100 .....	12	6.5	22	13.5	34	10.0
101 - 300 .....	64	35.0	18	11.0	82	23.5
301 - 600 .....	42	23.0	7	4.0	49	14.0
601 - 1,000 .....	29	16.0	0	—	29	8.0
1,001 - 2,000 .....	19	10.0	1	.5	20	6.0
2,001 - 5,000 .....	6	3.5	0	—	6	2.0
5,001 and over .....	3	1.5	0	—	3	1.0
	<u>183</u>	<u>100.0</u>	<u>163</u>	<u>100.0</u>	<u>346</u>	<u>100.0</u>

It will be noted from the above table that over 45 per cent of the systems operate less than 100 stations each and that 69 per cent have less than 300. Since the average system of less than 300 telephones cannot justify or afford a full-time employee to construct and maintain the plant, and still less, pay for management which is experienced in the telephone business, it is obvious that at least this 69 per cent of the total systems are operated not as a business but as something secondary to the principal occupations of the people concerned.

This is true irrespective of type of ownership, except possibly for systems owned by individuals. Even switchboard operators in the smaller connecting companies are not likely to be trained for the work but do it as incidental to housework or other activities.



## *The Provincial Apiarist*

A total of 48,391 colonies of bees was inspected by Ontario Apiary Inspectors during 1957, in 3,339 apiaries. American Foulbrood was found in 271 apiaries, or 8.1 per cent of those inspected. These diseased apiaries contained 1,002, or 2.0 per cent, infected colonies.

In 1957, 3,145 beekeepers registered 5,649 apiaries and 135,516 colonies.

During the year 48 disease samples were diagnosed. Approximately 178 permits were issued for selling and moving colonies and equipment. Thirty-two (32) permits were issued for moving 4,485 colonies for pollination of fruit, greenhouse and legume crops.

The Ontario honey crop in 1957 totalled 10,287,000 pounds—a substantial increase over the 1956 crop of 5,760,000 pounds. This increase was due to good moisture conditions during the early part of the year, an increase in the amount of clover available, and suitable weather for nectar secretion during the clover blooming period.

The 1957 detailed crop report was prepared by the Dominion Bureau of Statistics, Ottawa. The Provincial Apiarist supplied county lists of beekeepers for this work. It is planned to continue this survey system with the Dominion Bureau of Statistics in order to have a uniform system of obtaining crop production figures throughout Canada.

### INSPECTION AND REGISTRATION OF COLONIES OF BEES

County	INSPECTION				REGISTRATION	
	Apiaries		Colonies		Apiaries	Colonies
	Inspected	Diseased	Inspected	Diseased		
Algoma .....	10	0	128	0	9	104
Brant .....	113	7	1,048	20	90	1,472
Bruce .....	15	0	527	0	209	6,681
Carleton .....	133	10	3,420	79	158	4,338
Cochrane .....	25	0	385	0	20	259
Dufferin .....	39	2	682	13	62	2,028
Dundas .....	32	1	450	0	68	1,548
Durham .....	96	4	435	2	93	2,070
Elgin .....	104	4	1,142	56	139	2,756
Essex .....	158	23	1,376	42	188	2,624
Frontenac .....	20	1	454	2	63	1,563
Glengarry .....	19	2	801	2	73	3,417
Grenville .....	25	1	344	1	60	1,274
Grey .....	80	8	1,620	20	254	8,925
Haldimand .....	11	0	344	0	158	4,098
Haliburton .....	4	0	32	0	6	46
Halton .....	9	1	193	0	104	3,112
Hastings .....	42	8	673	20	205	6,255
Huron .....	85	0	2,061	0	204	5,928
Kenora .....	No Inspection				4	19

County	INSPECTION				REGISTRATION	
	Apiaries		Colonies		Apiaries	Colonies
	Inspected	Diseased	Inspected	Diseased		
Kent .....	145	1	1,089	2	121	1,698
Lambton .....	157	43	2,120	161	227	5,139
Lanark .....	15	1	426	1	97	3,273
Leeds .....	47	0	967	0	84	2,244
Lennox & Addington ..	1	0	8	1	86	2,935
Lincoln .....	87	7	594	11	166	2,122
Manitoulin .....	12	0	71	0	13	126
Middlesex .....	153	4	2,064	5	207	5,617
Muskoka .....	17	3	104	10	12	123
Nipissing .....	8	0	55	0	12	55
Norfolk .....	117	8	1,023	14	94	889
Northumberland .....	128	13	1,399	32	151	2,970
Ontario .....	137	4	2,514	19	144	2,879
Oxford .....	80	8	938	33	106	2,239
Parry Sound .....	11	0	60	0	21	307
Peel .....	51	7	683	21	134	3,210
Perth .....	43	1	1,112	1	99	2,884
Peterboro .....	17	0	315	0	86	1,746
Prescott .....	73	11	2,362	39	72	3,887
Prince Edward .....	55	9	1,229	80	65	1,170
Rainy River .....	22	0	423	0	36	800
Renfrew .....	66	11	1,090	67	109	2,921
Russell .....	58	0	732	0	45	728
Simcoe .....	130	9	2,440	72	277	7,498
Stormont .....	12	1	508	4	72	2,023
Sudbury .....	No Inspection				2	7
Thunder Bay .....	No Inspection				8	40
Timiskaming .....	12	0	544	0	50	1,512
Victoria .....	78	2	752	5	94	2,086
Waterloo .....	109	4	1,006	8	114	2,218
Welland .....	90	6	606	24	167	1,764
Wellington .....	128	13	2,193	40	149	3,985
Wentworth .....	108	16	1,160	42	136	2,115
York .....	152	17	1,689	53	226	3,789
<b>TOTAL .....</b>	<b>3,339</b>	<b>271</b>	<b>48,391</b>	<b>1,002</b>	<b>5,649</b>	<b>135,516</b>

## *Provincial Entomologist*

The duties of the Provincial Entomologist were carried out in co-operation with the Department of Entomology and Zoology, Ontario Agricultural College, Guelph. Most of the work relating to the Plant Diseases Act and the Japanese beetle was co-ordinated through the Ontario Fruit Branch with the Plant Protection Division of the Canada Department of Agriculture.

Extension work in relation to control of injurious pests was carried out as the need and time permitted. Pests, with a few exceptions, were well controlled in 1957, but a few that were very plentiful or difficult to control included six-spotted leafhoppers (the vector of aster yellows virus), zebra caterpillars, armyworms in a limited area, white grubs, and garden slugs. The crop damage from the aster yellows virus to lettuce, carrots, and many other crops was extensive.

Because of an increase in the number of Japanese beetles collected in two areas in 1956, 31 acres in Port Burwell and 36 acres in Hamilton were treated with 10 per cent dieldrin granulated insecticide at 30 pounds per acre in the spring of 1957. Trapping for the beetles was continued in 1957 in southwestern Ontario, with very few beetles being captured in areas that had been treated; however, large numbers were taken in one area in each of Hamilton, St. Catharines, and Welland. As a result, in the fall of 1957, 15½ acres at Hamilton, 22 acres at St. Catharines, and ½ acre at Welland were treated with 10 per cent dieldrin granulated insecticide at 30 pounds per acre. All of the Japanese beetle work was in co-operation with the Canada Department of Agriculture.

### REGULATORY DUTIES

The Provincial Entomologist under the Director of the Ontario Fruit Branch was in charge of certain "Plant Diseases" under the Plant Diseases Act.

#### Nursery Inspection

Licences were issued by the Ontario Fruit Branch for the operation of 242 nurseries and 58 dealers in nursery stock in 1957. The total stock inspected numbered 4,682,801, of which 75 were infested with San Jose scale, 4 with fire blight, and 23 with black knot. The infested plants were destroyed.

Juniper scale was found in a number of nurseries, but in almost all places the infestation was light. Lecanium scale was found on a moderate number of plant species, with an indication that it may be increasing in importance. European pine shoot moth, birch leaf miner, and pear leaf blister mite occurred in about the same numbers as previous years.

#### Bulb and Stem Nematode, *Ditylenchus dipsaci* (Kuhn 1857) Filipjev, 1936

The bulb and stem nematode was discovered in the Leamington Marsh on onions in 1957. This is the only record of this nematode on onions in Ontario. The infestation was on Dutch setts that would be replanted in 1958 and on onions for table stock. To prevent the spread of this nematode by means of the setts for



replanting, this pest was added as a "disease" under the Plant Diseases Act, 1954. A survey was conducted of all setts on the Leamington Marsh in the fall of 1957, and infested setts were found on eleven properties. These, amounting to 41,587 pounds, were confiscated under the Plant Diseases Act, 1954, and destroyed.

#### **Apple Maggot**

Regulations and survey work were carried out by the Ontario Fruit Branch and the Canada Department of Agriculture. Infestations as shown by the fall survey were generally light, presumably because almost all of the adult flies emerged over a short period of time in July. In 1956 many flies emerged in August, resulting in a heavy infestation for that year.

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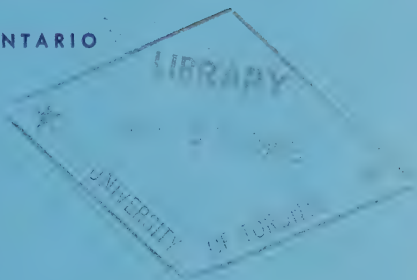


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PROVINCE OF ONTARIO



# Report

OF THE MINISTER OF AGRICULTURE

1958/59

FOR THE YEAR ENDING MARCH 31, 1959





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REPORT OF THE  
MINISTER OF AGRICULTURE



Ontario Department of Agriculture

**REPORT**  
OF THE  
**MINISTER OF AGRICULTURE**  
PROVINCE OF ONTARIO

FOR THE YEAR ENDING MARCH 31, 1959



Printed by Order of The Legislative Assembly of Ontario (Sessional No. 21 — 1959)  
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DEPARTMENT OF AGRICULTURE  
PROVINCE OF ONTARIO

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TO THE HONOURABLE LT.-COL. JOHN KEILLER MACKAY, D.S.O.  
*Lieutenant-Governor of Ontario.*

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture  
for the year ending March 31, 1959.

I have the honour to be, sir,

Your obedient servant,

W. A. GOODFELLOW,  
*Minister of Agriculture.*

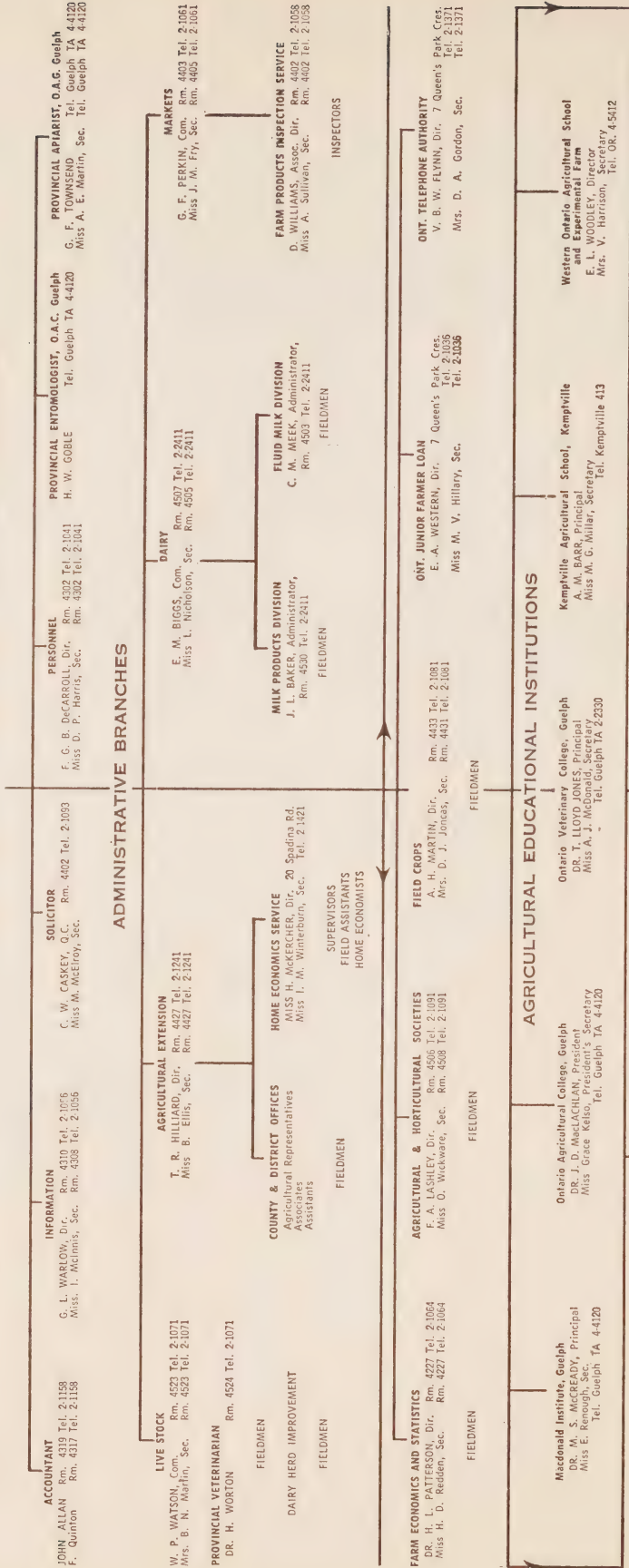
Toronto, March 31, 1959.

# ONTARIO DEPARTMENT OF AGRICULTURE ORGANIZATION CHART

**NOTE**  
Except as noted All Telephone Numbers  
Are on EW. 3-1211.

**MINISTER OF AGRICULTURE**  
THE HON. W. A. GODFELLOW - - - Rm. 4302 Tel. 2-1041  
Mrs. B. C. Houston, Sec. - - - Rm. 4302 Tel. 2-1041

**DEPUTY MINISTER**  
DR. C. D. GRAHAM - - - Rm. 4309 Tel. 2-1044  
Miss M. D. Price, Deputy's Sec. - - Rm. 4311 Tel. 2-1044  
R. G. BENNETT - - - Rm. 4313 Tel. 2-1047  
Miss C. R. Taylor, Sec. - Rm. 4315 Tel. 2-1047





COLLEGES and  
EXPERIMENTAL STATIONS  
of the ONTARIO  
DEPARTMENT OF AGRICULTURE

- *Educational*
- *Research*
- *Demonstration*



## *Ontario Agricultural College*

During the year a sharp impact was felt from increased demands within all three areas of responsibility, namely, education, research, and extension.

The increase in the student body is now taxing facilities to the limit. The completion of the Soils Building has given some relief, but it will not be until the Biology Building and the Chemistry-Microbiology Building are completed that significant relief can be expected. The old Gymnasium and the old Soils Building slated for demolition are again filled to capacity.

Increased pressures for agricultural research and extension are associated with the adjustments now occurring within the overall pattern of agriculture. The contributions of the Ontario Agricultural College are directed towards efficiency of production of high quality products.

### COURSES AND ATTENDANCE

In the Degree Course, some minor changes and some revision of courses have been made by the Departments of Engineering Science, Entomology and Zoology, and Horticulture. The name of the Degree Course Option sponsored by the Department of Physics was changed from Agricultural Science to General Science: this course conforms to the requirements for the Type A certificate for high school teachers. In the Graduate School, the Associate Diploma Course, and the Short Courses, few changes were made; the Department of Engineering Science made the Machinery Short Course, formerly restricted to 4-H Club members, open to other applicants.

In the undergraduate courses in Agriculture, 672 students were enrolled; in the Associate Diploma Course there were 145, in the course leading to the degree of Bachelor of Science in Agriculture there were 512, and in addition there were 15 special students. Students proceeding to the degree of Master of Science in Agriculture in the Graduate School numbered 80. The total attendance for the year at Macdonald Institute was 220; of these, 40 were registered in the one-year Diploma Course and 179 were enrolled in the course leading to the degree of Bachelor of Household Science; there was also one special student. Short Courses dealing with a great variety of subjects and varying in length from a few days to three months were held at different periods throughout the year. The attendance in Special and Short Courses was 1,805; the grand total attendance in all courses was 2,777.

The first postdoctorate Fellow to come to the College registered in the Department of Agriculture. The award was made by the National Research Council.

### ACADEMIC FUNCTIONS

#### Baccalaureate Service

The annual Baccalaureate Service for the graduating classes of the Ontario Agricultural College, the Ontario Veterinary College, and Macdonald Institute, was held on Sunday, March 30, 1958, in War Memorial Hall. The Baccalaureate address was delivered by the Rev. Kingsley Joblin, B.A., B.D., Th.M., Professor of Religious Knowledge, Victoria College, University of Toronto.



### Graduation for Associate and Diploma Courses

Graduation exercises for the Ontario Agricultural College and Macdonald Institute Associate and Diploma Courses were held on Wednesday, May 14, 1958. The students were addressed by Mrs. J. D. Taylor, B.A., of Hamilton, Ontario. Diplomas were presented to 64 graduates of the O.A.C. two-year Associate Diploma Course, and to 31 graduates of the Macdonald Institute one-year Diploma Course.

### Convocation for Degree Students in Agriculture and Household Science

The degree of Bachelor of Science in Agriculture was conferred on 89 students, and the degree of Bachelor of Household Science on 30 students at the annual convocation exercises held on Friday, May 16, 1958, in War Memorial Hall. The degrees were conferred by Dr. Samuel Beatty, M.A., Ph.D., LL.D., F.R.S.C., Chancellor of the University of Toronto, and the convocation address was delivered by Dr. Murray G. Ross, M.A., Ed.D., Vice-President of the University of Toronto.

### EVENTS OF THE COLLEGE YEAR

#### Farm and Home Week

The annual Farm and Home Week brought an increased number of farmers, students, and other visitors to the College from June 9 to June 13. More than 15,000 visitors came to the campus during this week. The daily programme included a series of floats demonstrating modern farm management.

#### Annual Alumni Reunion

More than 1,500 graduates of the Ontario Agricultural College and Macdonald Institute and their families attended the annual reunion of the O.A.C. Alumni Association on June 21. At the annual church service on Sunday, June 22, a memorial portrait of the late Professor G. N. Ruhnke was unveiled by representatives of Year '38, who donated the portrait to the College.

#### Opening of the New Physical Education Building

On June 21, the new Physical Education Building was officially opened by the Hon. J. N. Allan, Provincial Treasurer, and the Hon. W. A. Goodfellow, Minister of Agriculture.

#### Death of John D. Buchanan

John D. Buchanan, who retired as Director of Extension at the O.A.C. in 1943, died on February 8, 1958, in his 87th year. After graduation in 1899, he taught in the Department of Field Husbandry for five years before joining the Iowa State College Faculty. Returning to the O.A.C. in 1924 as an extension specialist, he later became director of the department. For many years he was secretary-treasurer of the O.A.C. Alumni Association. One of his latest undertakings was the preparation of the 75th Anniversary brochure for the College. His active interest in the College was maintained until his death.

#### Death of Professor Leonard Bryant

Professor L. R. Bryant, B.A., M.A., F.C.I.C., for 31 years a popular member of the faculty of the Ontario Agricultural College, died at Guelph on May 10, 1958. In 1935, he assumed the position of Dairy Chemist at the College, and was in charge

of research and education in Dairy Chemistry until the time of his death. In 1956 he was appointed provincial analyst for the Dairy Branch of the Ontario Department of Agriculture. He was a fellow of the Chemical Institute of Canada, a member of the American Chemical Society, and a member of the American Dairy Science Association.

### **Remembrance Day Service**

The annual Remembrance Day Service was held on November 11 in War Memorial Hall with a large attendance of the faculties and students of the three Colleges. The speaker was Major Rev. David P. Rowland, M.C., C.D., D.D., of Toronto.

### **Lecture by Dr. Hilda Neatby**

On November 10 in War Memorial Hall, Dr. Hilda Neatby, Professor of History at the University of Saskatchewan, addressed a large group of students, faculty, and Guelph educationalists on the subject "Our Educational Dilemma." Arrangements for Dr. Neatby's visit were made by the O.A.C. Faculty Association.

### **Morrison Memorial Lecture**

Dean J. M. Martin, head of the faculty of Social Sciences, Laval University, Quebec, delivered the 1958 Morrison Memorial Lecture in War Memorial Hall on November 6, 1958. He addressed the students and faculty on the subject "The Role of the University in Quebec."

### **Distinguished Visitors**

During the year a number of outstanding people in the field of science and education visited the campus. Included in our list of distinguished guests were: Professor E. Lods of Macdonald College, President of the Canadian Seed Growers; Dr. Darlow, Dean of Agriculture, Oklahoma University, and Mrs. Darlow; Dr. R. F. Montgomerie, and Dr. D. J. Edwards, of the Welcome Research Laboratories, London, England; Mme. Fritseh, President of the International Home Economics Association; Sir Herbert Howard, Secretary of the Commonwealth Agricultural Bureau; Chancellor Beatty, of the University of Toronto; Dr. Knowles and Dr. Buchanan, of the British Egg Board; A. Y. Jackson, Canadian Artist; Dr. R. C. Carter, of the Virginia Polytechnic Institute; Dr. J. L. Bolton, National President of the Agricultural Institute of Canada; Professor J. J. Bullen, of the Rowatt Research Institute, Scotland; Dr. R. Glen, Director General of Research, Canada Department of Agriculture; Dr. V. B. Wigglesworth, of Cambridge University; Dr. K. E. Tupper, President of the Engineering Institute of Canada; and Principal Bently of the Vermilion School of Agriculture, Alberta.

### **Groups and Conferences**

During the year more than 50,000 people visited the College, representing every phase of the agricultural industry in the Province. Included in this number was a large proportion of young people. In March, more than 700 Junior Farmers met in War Memorial Hall for their annual Conference, and over 1,000 participated in the Junior Farmers' Field Day in June. In July, 2,000 members of 4-H Clubs visited the College during 4-H Club Week. The inter-club judging competitions in October brought 700 4-H Club members to the College. In October, 70 students from more than 20 high schools spent a weekend at the College, together with their

Vocational Guidance teachers, and in March, more than 1,000 high school students were the guests of the College students at the annual College Royal.

In May, over 2,000 student teachers from the four Teachers' Colleges in Ontario visited the College. Young farmers from England, Ireland, and Scotland on exchange visits were guests of the College at different times.

In March, 1959, the Ontario Safety Conference brought more than 500 people to the new Physical Education Building for a very successful meeting. Two groups of scientists from the U.S.S.R. — Poultrymen and Conservationists — visited various College departments during the year. The Annual Conference of the Extension Branch of the Ontario Department of Agriculture brought 200 agricultural extension people to the campus.

The Federated Women's Institutes held their annual convention at the College in May, with 650 rural women in attendance. The Women's Institute Holiday brought an additional 200 rural women to the College in July. International groups included the International Home Economists Conference of 300; 300 members of the American Society of Agricultural Engineers; and the tenth International Congress of Genetics. The Canadian and Provincial Entomological Society again chose the O.A.C. for its annual meeting place.

Nearly 1,000 live stock men, representing various breed associations, met at the College for their annual field days during Live Stock Week in June. The Ontario Farmers Union held its annual conference in War Memorial Hall in October.

Other groups holding meetings or conferences at the College during the year included the Co-operative Medical Services Association, the Ontario Beekeepers Association, the Canadian Farm Building Planning Service, the Federal-Provincial Soils Conference, the staffs of the Diploma Courses at O.A.C., K.A.S., and W.O.A.S., the Ontario Potato Growers, the Ontario Mink Breeders, the Canadian Association of Consumers, Brantford Board of Trade, Buffalo Garden Club, the Chicago Farmers Club, Missouri Agricultural Tour, Ontario Poultry Federation, Canadian Seed Growers Association, and the ninth annual School for Rural Clergymen.

## STUDENT ACTIVITIES

The use of the new Physical Education Building this year made it possible to bring together under one roof practically all of Wednesday's major College Royal activities with the exception of a few retained in the Macdonald Institute. Fine weather brought out a large attendance of visitors including over 1,000 high school students who were able to see a complete afternoon's programme without leaving the building. The entire series of College Royal activities, beginning with the Ball the preceding Saturday night and ending with the three-night run of The Curtain Call Revue, was carried out successfully. Outstanding in the programme of the Union Literary Society was the success of its inter-university debaters. By defeating Western, McMaster, St. Patrick's, and Loyola they won the championship of the Inter-University Debating League of Ontario and Quebec and became its representative in the Canadian finals where they lost on a close decision to Dalhousie University. The J. Lockie Wilson Memorial Trophy for inter-year debating was won by the first and second years of Macdonald Institute. In drama, three one-act plays under student directors were presented in the fall term. The annual Public Speaking Contest was held on College Royal English Night. The Union Philharmonic Society arranged the usual series of Sunday Nine O'Clocks and participated in the Inter-University Choral Festival which was held this year at McMaster University. In



addition, the Choral Club, assisted by three members of the Faculty, arranged a Christmas Concert which proved to be its most popular in many years. This was a presentation of Menotti's "Amahl and the Night Visitors." The regular programme of Student Christian Movement activities was carried on throughout the year. In addition to carrying out its regular duties the Union Council arranged for a special lecture by Dr. George Whalley of Queen's University of "The Place of the Humanities in University Education."

## TRAINING FOR THE ARMED SERVICES

Officer cadets were trained for the three Armed Services. Although the number of students taking part in these schemes was small, the calibre of the participants, as a result of exacting selection, was high. The programme was divided into two parts, the first being given at the College during the academic year, the second in training ships and establishments in Canada, the United States, Bermuda, and Germany, during the students' vacation period.

## NEW SCHOLARSHIPS, PRIZES AND AWARDS

Among the many awards and grants made during the year were the United Co-operatives of Ontario grant-in-aid of \$2,000.00 for research and publications in Agricultural Economics; the Campbell Soup Company Limited scholarship of \$2,000.00 as part of a general programme of aid to education; the Aluminum Company of Canada fellowship of \$1,800.00 for research on farm structures; the Dr. Hector Astengo Trust Fund of \$5,000.00; a Science Service grant of \$5,600.00 for two years of research on the incidence and pattern of pectolytic enzymes in commercial cucumber brine stock; a Science Service grant of \$5,600.00 for three years of research on the characterization of lactobacilli from Cheddar cheese.

## RESEARCH AND DEVELOPMENTAL ACTIVITIES

The following report records major accomplishments in research and allied developmental activities during the 1958-59 fiscal year. \*

### SOIL AND WATER

#### Soil Surveys

Re-correlation and detailed reconnaissance surveys were conducted in the Counties of Wellington and Dufferin. Parts of Lincoln County (100,000 acres) were resurveyed on aerial photographs. Correlation revisions were made on the soil survey of Prescott and Russell Counties and in Lennox and Addington.

In a study of the usefulness of aerial photographs for detailed soil survey in Middleton Township, Norfolk County, it was found that photographs could be used to avoid a portion of the field checking. However, because of variations in photographic features owing to crop cover and the season of the year when the photographs were taken, as well as variations owing to photographic processing, accurate, detailed soil mapping required much field examination in addition to the study of the photographs of the area.

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\* The Ontario Agricultural College wishes to acknowledge, with thanks and appreciation, the whole-hearted co-operation of other individuals and groups, belonging to federal, provincial, and university research organizations.

Trace element field survey work was conducted in Norfolk, Oxford, Elgin, Kent, and Lambton Counties. Additional areas with boron and molybdenum deficiencies were found, and the soil test was extended to rutabaga growing areas.

### Soil Fertility

In a greenhouse study, lime increased the yield of alfalfa grown on acid (pH 5.8) Oneida clay loam. Calcium chloride applied at rates to supply equivalent amounts of calcium to that in the lime caused a decrease in the yield of alfalfa. At the rate of 8,100 pounds per acre, calcium chloride prevented the germination of alfalfa seeds. There was a high positive correlation between increase in soil pH and molybdenum content of alfalfa.

Using sugar beets grown in the greenhouse, it was found that band application of phosphorus fertilizer resulted in a greater uptake than broadcast or simulated plow-down applications, particularly when nitrogen was included in the band with phosphorus.

Corn seedlings were used to measure the availability of phosphorus both in soil and in resin media in the greenhouse. It was found that the uptake of phosphorus was least when all of the nitrogen was supplied as ammonia rather than nitrate. The difference in uptake of phosphorus in the presence of nitrate nitrogen as compared to ammonia nitrogen was greatest at low soil temperatures.

Oven-drying of soil in the laboratory affected the exchangeable potassium content, the direction of the change being dependent on the initial level of exchangeable potassium. Of 180 soils analysed, those having exchangeable potassium at or near 1.16 per cent saturation of the cation exchange capacity showed no change upon oven-drying. Those above 1.16 per cent showed a reduction; those below showed an increase.

Several chemical methods for testing muck soils were correlated with potato yields at several locations on the Bradford marsh. Soils testing 450 or more for potash showed no response to additional fertilizer. None of the phosphorus tests used gave a satisfactory basis for predicting fertilizer requirements on these muck soils.

In regional trials on various farms, the average yields without fertilizer were higher on crops following legume-grass sod than on the same crops following two or more years of corn or other cereals. Wheat yields were higher by nine bushels per acre, oat yields by 19 bushels per acre, and corn yields by 26 bushels per acre.

It was also found that for oats seeded down, 200 pounds per acre of 5-20-20 fertilizer gave the highest average yields of oats and first-year hay, although the yield of oats was lower than that obtained when 200 pounds per acre of 10-10-10 fertilizer was used. On established legume-grass stands, 300 pounds per acre of 0-20-20 fertilizer, applied annually in the fall, gave maximum returns over three hay years.

A crop rotation study on Haldimand clay loam showed that cost of production per bushel of corn was higher when corn was grown continuously than when grown in a corn-oats-hay-hay rotation. Net returns per acre over a four-year period, however, were higher for continuous corn than for rotations including oats and hay as well as corn.

Field demonstrations on Manitoulin Island showed that 200-300 pounds per acre of 10-10-10 fertilizer gave optimum average yield of oats. Nitrogen fertilizer was especially necessary for increased yield of oats.

A technique was developed for measuring the fertilizer phosphorus in plants during the growth cycle without harvesting the plants. When radio-active phosphorus fertilizer was used, the *in situ* activity within the plants was highly correlated with the fertilizer phosphorus content. The relationship between *in situ* activity and fertilizer phosphorus content varied with plant height.

Studies of the respiration pattern in soils treated with various organic compounds suggest that certain patterns can be related to the structure of the compounds. Thus it appears that, (1) ring structure, and (2) hydroxyl groups on the ring, progressively render the compounds more resistant to microbial attack until, with lignin preparations, the pattern is very similar to that obtained with native soil humus.

Respiration studies on acid forest soils revealed that the addition of ground limestone stimulated microbial activity and encouraged the leaching of organic matter to the B horizon, apparently by encouraging the breakdown of the forest litter in the humus layer.

Continued studies on the effect of pesticides on the soil microbial populations have shown that, while certain insecticides and organic and organic-mercury fungicides produce a variety of stimulatory and inhibitory effect on soil respiration, the inert carriers of these products produced little or no change.

### Soil Physics

In a field study it was found that, (1) the volume of water retained by soil increased as soil compaction (bulk density) was increased artificially from 1.18 to 1.35 gm. per c.c., and (2) there was no point on the moisture versus time curve that could be designated as field capacity, but the linear relationship was significant. Cropping sequence affected organic matter and non-capillary porosity as follows: sod annually greater than oats in rotation, greater than corn in rotation, greater than corn annually. Conversely, the volume of water retained at field capacity by soil was related to cropping practice as follows: sod annually less than oats in rotation, less than corn in rotation, less than corn annually.

In 1958, for the first time in Canada, continuous recordings were made of evapotranspiration and of the heat budget components on a corn field. It was found that the percentage of the solar radiation reflected increased with increase of vegetative cover on the ground. Between 80 and 90 per cent of the net radiation on a daylight basis was used for evapotranspiration. The stage of development of the crop had little effect on the amount of evapotranspiration relative to the energy available.

Estimates of potential evapotranspiration by Thornthwaite or Penman methods agreed with the actual recorded evapotranspiration from clipped grass over the whole season, but over periods of a few days neither method of estimation was reliable. Under cool conditions, the Thornthwaite method underestimated evapotranspiration.

### Irrigation and Hydraulics

Surface run-off from experimental watersheds during 1957-58 was the lowest in the five years of the experiment. On watershed W-1, plowed in the fall of 1957 and seeded down to oats and hay in 1958, there was no recorded run-off. There was barely a trace of run-off from W-2, the wooded watershed; from W-3, in sod throughout the period, the surface run-off was one-third of an inch, while from W-4, the stripped cropped watershed, the surface run-off was 0.15 inches. The low volumes of run-off are attributed to the very low winter precipitation during 1957-58.



The vinyl irrigation pond liner installed at the Delhi Experiment Sub-station in 1956 is still in good condition. The only evident mechanical damage has occurred at the water line, as a result of impact from the heels of shoes.

Laboratory determinations on the air permeability of sand media, with moisture frozen within the media, have led to the development of a regression equation expressing the permeability as a function of the particle size and per cent moisture saturation.

Laboratory studies on samples of sand media have indicated that the available storage capacity in the media is highly significant in affecting the mass infiltration of water in the initial stages of water application.

### Drainage

A survey of 114 drainage pumping plants in Ontario, serving over 90,000 acres of land, has indicated that no consistent design criteria have been used for such plants. The operating costs of these plants vary widely, averaging 93 cents per acre per year.

The analysis of strength and absorption characteristics on samples of drain tile submitted by 40 manufacturers indicated that the majority of samples met the specifications for strength as laid down by the American Society for Testing Materials. However, most of the samples tested were below the requirements for absorption. Further study is necessary before it will be possible to determine the significance of the absorption factor under Ontario conditions.

Sub-surface drainage rates in excess of one-half of an inch per 24 hours have been observed from the tile outflow measurements in Brookston clay soil. This is in excess of the design drainage rate of three-eighths of an inch, at present being used.

## CROPS

### Foliar Fertilization

Field experiments were carried out on staked tomatoes in the Aldershot-Burlington area. Average numbers of Blossom End Rot fruits per plot of 20 plants (4 replicates) were: untreated, irrigated — 5.75; untreated, not irrigated — 43.50; 16 pounds of calcium chelate per acre, irrigated — 2.00; 16 pounds of calcium chelate per acre, not irrigated — 5.50; 32 pounds of calcium chelate per acre, irrigated — 0.50; 32 pounds of calcium chelate per acre, not irrigated — 1.75. The benefits from calcium chelate as a foliage spray, and from irrigation, are obvious.

The regional testing programme on the major field crops of the Province resulted in revision of field crop recommendations for the different regions of the Province.

### Forage Crops

A study of the crown development of Vernal alfalfa, in relation to various cutting practices, was initiated. Cutting of plants prior to the bud stage greatly reduced the development of crown buds and shoots, regrowth coming largely from lower nodes of the cut stems. Successive cuttings at this early stage held back the crown shoots throughout the season. A marked change in the fall development of one-year-old plants was obtained by extending daylength in the field, with artificial light. Crown roots of the long-day plants showed less growth, while the crown shoots were

decidedly less hardy than the normal-day plants. These results suggest that hardness of crown shoots could be a major factor, as yet not fully recognized, in the whole picture of winter hardness of this crop.

Earlier work has shown that gibberellin will induce stem elongation of red clover under photoperiods (short-day) that will normally allow only vegetative growth. Weekly treatments maintained this elongation for over five months, without evidence of determinate flower-bud production. When gibberellin was applied to clover timed in relation to a switch from vegetative to reproductive (long-day) photoperiods, there appeared to be a parallel reaction of the chemical and the long photoperiod for about one to two weeks. It would appear that the initiation of reproductive growth in clover under long daylength encompasses: (1) a tripping of the stem elongation mechanism, either by the daylength or by the gibberellin, and (2) subsequent elongation and floral development under the influence of the long day.

Bacteriological analyses and greenhouse trials on 49 commercial legume inoculants showed that 24.5 per cent were unsatisfactory on the basis of low counts of nodule bacteria, and 5.9 per cent were unsatisfactory by greenhouse trials. Contamination in all cultures varied between 1.8 and 50.0 per cent of the total counts. Streptomycetes were found to be the main contaminants, and many of them were found to possess an inhibitory influence on nodule bacteria.

In order to produce birdsfoot trefoil seed which meets grade standards for pedigreed seed it is necessary to control other legumes in the standing crop because seed of trefoil and of other legumes cannot be separated in the seed processing operations. Dalapon applied at four pounds per acre to birdsfoot trefoil in the early fall or early spring was found to be effective in controlling other legumes in trefoil seed fields. Use of Dalapon also was found to kill or weaken grasses in trefoil seed fields, so that higher yields of trefoil seed can be obtained.

One major cause of stand failure and low yield of birdsfoot trefoil was found to be its lack of competitive ability with other legumes and certain grasses. Best performance for general use is obtained from a simple mixture of trefoil and timothy. A starter fertilizer containing a minimum of 15 pounds of nitrogen per acre was effective in improving trefoil stands.

Orchard grass for pedigreed seed production provided the highest yields of good quality seed when grown in 14 inch rows rather than in wider rows or in broadcast seedings, for seed fields maintained for two years. For seed fields to be maintained for long periods, 28 and 35 inch row spacings are superior. A seeding rate of 7 pounds per acre provides adequate stand and as good seed yields as higher rates.

Final assessment was obtained on a number of forage crop varieties and, as a result, Alfa alfalfa was licensed and added to the recommended list for Ontario. Frode orchard grass was licensed also. Further information on the performance of Du Puits alfalfa resulted in an expansion in the area for which it is recommended in Ontario. A series of red clover strain trials, completed in 1958, showed that current varieties and commercial seed lots of British double-cut and single-cut red clover are inferior to Lasalle, the best Canadian variety for Ontario, and to Canadian-grown common red clover.

Studies on methods of determination of botanical composition in two-component forage mixtures indicated that visual estimation of the standing crop can be used satisfactorily. This method, compared to the hand separation technique, is more rapid, less costly, and less variable, and so can be used widely in competition and mixture formulation research.

### Other Field Crops

The evaluation programme on 15 new corn hybrids produced by commercial companies and the Canada Department of Agriculture was completed, and these hybrids were recommended and licensed for sale in 1959.

A machine has been developed which will permit plowing and planting of corn in the furrow slice in one operation. Preliminary tests indicate that this machine works very well in loam soils but has some disadvantages when used on clay soils.

Preliminary field tests of an inexpensive combine harvester attachment for cutting and conveying corn stalks to the combine cylinder have indicated that this method of harvesting should prove feasible for dwarf corn. Further performance tests are required, however, on this attachment.

Progress has been made on the development of turnip harvesting equipment. A modification of a commercial sugar beet topper for use in topping turnips shows considerable promise. The topper proved to be highly sensitive in operation and could be adjusted to follow the heights of the turnips and cut at the proper level at a speed of one mile per hour. The disk type turnip lifter-loader proved capable of cutting the tap roots accurately, but further development is necessary to provide for satisfactory feeding of the turnips to the elevator.

### Tree and Small Fruits

Supplemental sprinkler irrigation was introduced into the test orchard at Collingwood. The extra water applied during the first year had the same effect on yield as 2,000 pounds of 10-10-10 fertilizer had in previous years. The irrigated, high fertilizer plots yielded at the rate of 10 tons of marketable fruit per acre. If this had been the yield of the whole orchard, the initial cost of the irrigation system would have been paid in one year by the increase in yield.

An automatic pollen dispenser was developed and tested. This apparatus consists of a pollen hopper activated by a clockwork mechanism to automatically dispense chilled pollen over a period of four to five hours. It is used in conjunction with the modified Nova Scotia Agricultural College pollen insert, and reduces the labour involved in servicing inserts with pollen while they are in use.

Streptomycin can be distributed readily to pear blossoms by the use of honeybee colonies equipped with pollen inserts and automatic dispensers. The streptomycin cannot be distributed simultaneously with the pollen, since the germination will be destroyed. By distributing streptomycin at early and late bloom, and pollen alone at full bloom, a normal set of fruit was obtained.

Inheritance of the everbearing character in *Fragaria* was determined to be through complementary gene action in four of six progenies studied. Three of the lines appear to be allopolyploids. The fourth line is an autoallopolyploid with three genomes in the autopolyploid condition.

Severe spring frosts in 1958 greatly reduced strawberry yields. An attempt was made to correlate blossom injury to blossoming season. In 11 varieties studied, with two exceptions (Armored and Sparkle), there appears to be a correlation. Generally, selection of varieties for regions where spring frost is a problem should be based on blossoming season rather than fruiting season.



## Vegetables

Of 14 tomato varieties and hybrids tested at Collingwood in 1958, Vineland selections V-563 and V-567 were best for whole pack canning, and Stokecross 5 for juice. O.A.C. hybrid "Harrow x gs" is promising, but will be combined with KC135 for further trial. High total solids appear to be correlated inversely with readings on the Hunter Colour and Colour Difference Meter.

During the three-year period from 1956 to 1958, six separate lines of tomatoes have been developed at Guelph which set fruit at 50°F. or below. Tomato plants containing  $d^{mdm}$ , the factor for dwarf modifier, have short, thick, main stems. For this reason, it was considered that at the time of germination they might have the strength to push their way up through cold soils. Work with a population of 2,516 outdoor-sown plants showed that this was not the case. At times, the germination of plants containing the factor  $d^{mdm}$  was as much as 49 per cent below that expected.

When gibberellic acid was applied to celery three or four weeks before the intended harvest date, the harvest was a week earlier without loss in stalk diameter or length. Treatment elongates first and second internodes of the outer petioles and increases stalk diameter slightly.

Various concentrations of gibberellic acid spray applied to muskmelon increased early yields up to 70 per cent and total marketable yield up to 39 per cent, respectively.

3-Chloro-isopropyl-N-phenyl-carbamate (3CIPC) completely inhibited potato sprouting for four months, in an experiment lasting from January to May, with Huron and Sebago potatoes which had completed their rest period. The 3CIPC was used as a dip at concentrations of 0.1, 0.5, and 1.0 per cent; as a volatile at concentrations of 0.28, 0.56, and 1.12 grams per bushel; and as a dust at concentrations of 1, 2, and 3 per cent. In all instances, the lowest concentration gave good results. During the four-month test, untreated samples lost an average of 6.5 per cent in weight, from sprout growth.

Rhubarb seeds exposed to thermal neutron irradiation of six and nine hours' duration—total dose (flux x time) of 3.74 and 5.67—showed no significant difference in germination but plant mortality was increased to 14 and 18 per cent respectively, as compared to 9.5 per cent in controls.

In a two-year mulch and plant protector investigation it was found that hotcaps, when used alone, increased the early and total muskmelon yields more than either polyethylene or aluminum foil mulch. Greatest increase in early yield was obtained from a combination of hotcaps and polyethylene mulch or hotcaps and aluminum foil mulch. These combinations, however, did not increase the total yield more than the use of hotcaps alone. Yield increases were due mainly to an increase in fruit number.

## Greenhouse Operation

Various plastic materials are under test as substitutes for glass in greenhouse structures. "Polyflex 230" was discarded as being unsatisfactory. To date, "Kodapac" has withstood the winter season at Guelph, although some reports have indicated that this material would not withstand extreme temperature changes. "Mylar" and "Eskalite" seem to remain satisfactory after one year. Polyethylene, because of its low cost, would seem to be well adapted for temporary structures to be used for the production of spring transplants and general bedding plants. Corrugated "Fiberglas" has proved to be a satisfactory substitute for glass but, as yet, the cost of the material is rather high.

Greenhouse-grown chrysanthemum plants were significantly retarded in vegetative growth when grown in soil in which the same crop had been produced immediately prior to the setting of rooted cuttings. Extracts from dried roots using water, ethanol, and acetic acid as solvents failed to produce effects comparable to those that followed treatment with unextracted roots. Roots of lettuce and chrysanthemums, and their water extracts, had a very marked inhibitory effect on seed germination and subsequent seedling development. The inhibition may be assumed to be directly related to that noted in normal bench production, but this relationship has not been established definitely.

Four varieties of Easter lily bulbs, 7-8 inches in circumference, were planted on November 12, 1958, in a 7:3:2 soil:peat:sand mixture. All bulbs were then held at 50°F. for four weeks, at which time an excellent root system had developed. A 20-20-20 soluble fertilizer was applied at weekly intervals. The temperature was raised to 62-65°F. until February 11, and then raised to 68°F. There was no significant difference in stem length, bud count, or bloom date between Saeki and Japanese Croft varieties. On the other hand, Croft was about two inches shorter in stem length, had a lower bud count, and was a week later in blooming. All plants of the Hakoneya variety were very late in blooming.

### Nursery Stock

Plantainer-grown *Juniperus pfitzeriana* plants were treated twice weekly with 2-1-1 ratio fertilizer at three concentrations. The highest concentration resulted in serious root burning due to excessive nitrogen and total salts, but recovery was rapid and complete, and these plants eventually outgrew those receiving the lower concentrations. Correlated soil tests indicated that: (1) 75 p.p.m. total salts and/or 15 p.p.m. nitrogen caused root damage; (2) when  $P_2O_5$  was below 2 p.p.m., and  $K_2O$  below 5 p.p.m., plant growth ceased; and (3)  $P_2O_5$  and  $K_2O$  did not build up beyond 6 and 15 p.p.m., respectively. Leaching due to natural precipitation prevented full use of the chemicals added, particularly at the lower rates of application.

## LIVE STOCK

### Breeding

A summary of the type records of 4,492 Ayrshire cows classified between June 1957 and August 1958 was completed in order to establish an average for the Ayrshire breed on type. The percentages of the cows graded "Good Plus and Better" (classified in the three top grades: Excellent, Very Good, and Good Plus) for the different sections of the score card are as follows: Final Rating — 59; Head and Neck — 71; Shoulder and Chest — 72; Middle and Loin — 90; Rump and Thighs — 60; Feet and Legs — 61; Udder Subdivisions, Shape and Size — 59, Attachments — 65; Teats, Veins and Udder Quality — 59; General Dairy Quality — 80; and Breed Character — 62.

In a study of type rating of Holstein-Friesians continued this year it was found that 47.5 per cent were placed in the top three classification grades (Excellent, Very Good, and Good Plus); this rating indicates no change in the quality of overall type within this breed. Data on the main sections indicate that considerable improvement is being made in some of the components of body conformation.

Data were taken from the type classification records of 9,469 two-year-old Canadian Holstein-Friesian cows and by using the intra-herd, paternal half-sib correlation method, the following percentage heritability estimates for final rating, the four main sections, and the four sub-sections of the type score card, were obtained:



Final Rating — 16; General Appearance — 20; Dairy Character — 14; Body Capacity — 16; Mammary System — 17; Fore Udder — 17; Rear Udder — 11; Legs and Feet — 14; and Rump — 9.

Report No. 1 involving 108 Ayrshire bulls, each with 10 or more classified daughters, was completed in December 1958. The daughter type information was summarized on a percentage "Good Plus and Better" basis. Forty-eight per cent of the bulls had progeny groups which averaged better than breed average. Considerable variation exists among progeny groups in the percentage "Good Plus and Better" figures for the different sections of the type score card. This indicates quite large genetic differences among sires in their breeding value for the various type characteristics.

A type report involving the progeny summaries of 1,621 Holstein-Friesian bulls, each with 10 or more classified daughters, was completed during the past year. Fifty-one per cent of the bulls reported had progeny groups equal to or better than breed average. These progeny groups ranged from a low of 0 per cent "Good Plus and Better" to a high of 100 per cent for final type rating, indicating very wide genetic differences in the bulls being used in Canada as to their breeding value for type.

The production performance of bulls in D.H.I.A. herds in Ontario has been computed and reported. In the latest report, the mechanics of computing the "contemporary comparison" has been changed to improve slightly the accuracy of the progeny results over previous methods. Progeny information for production for 304 Holsteins, 48 Ayrshires, 34 Jerseys, and 28 Guernsey bulls, all with 10 or more two-year-old daughters, indicates that large differences exist among the production performances of sire progeny groups of which some will be genetic. Fifty-two per cent of the bulls studied sired daughters with production performances better than those of their contemporary two-year-olds.

Ontario D.H.I.A. records, terminated between 1951 and 1956 inclusive, of two-year-old cows on 305 days, 2x basis were used for a comparison of four methods of evaluating the transmitting ability of Holstein Friesian bulls. Analysis was made of the production records of a population of 7,866 two-year-old cows, sired by registered Holstein-Friesian bulls, including 4,604 daughters of 48 sires studied, and 3,262 other two-year-olds in the same 743 herds. Each of the methods was examined with respect to the repeatabilities of different sized samples, the correlation between a large sample and several smaller samples, and the sources of variation as determined by various component analyses. The repeatability and correlation coefficients indicate pronounced superiority for the daughter average over the contemporary comparisons. However, herd effects which were removed automatically in the contemporary comparisons, but not in the daughter averages, biased the estimates for the daughter averages upward. In the various component analyses, herd effects accounting for 37.4 and 38.3 per cent respectively of the total variation in a daughter's milk and butterfat production were partitioned out. On this basis, considering between sire variability as a measure of the accuracy of the sire evaluation method, the daughter average was comparable to the within-herd contemporary comparison.

During the past year the Advanced Registry Station has been operating near capacity. One hundred bulls completed the test during 1958. These consisted of 58 Herefords, 35 Shorthorns, and 7 Aberdeen Angus bulls. The average performance of each of these groups was as follows:

	<i>Shorthorn</i>	<i>Hereford</i>	<i>Angus</i>	<i>Aberdeen</i>
Initial weight, lb. _____	572	572	559	
Final weight, lb. _____	964	997	930	
Average daily gain, lb. _____	2.33	2.53	2.21	



Of the 100 bulls, five failed to make the minimum average daily gain of 2.00 pounds per day and were designated for slaughter. An additional four bulls started the test but were removed for various reasons.

The collection of performance data from the College beef cattle herd was continued during the year. Season of birth appears to have an important effect on performance to weaning but more data are needed before correction factors can be calculated to minimize this effect. Performance data for the entire herd averaged: Birth Weight — 61 pounds; Weaning Weight — 451 pounds; Daily Gain (birth to weaning) — 1.91 pounds; Weight at 14 Months — 755 pound; and Daily Gain (weaning to 14 months) — 1.48 pounds.

The following data represent the first results from a swine cross-breeding experiment:

	<i>English Yorkshire x Landrace</i>	<i>English Yorkshire x Canadian Yorkshire</i>
Number of litters .....	3	4
Average number of pigs born per litter .....	11.3	13.2
Average birth weight (lb.) .....	3.0	2.9
Average weaning weight (lb.) .....	45	33
Average 112 day weight (lb.) .....	124	95
Average age at 200 lbs. (days) .....	154	173
Average lbs. feed/lb. gain .....	2.94	3.18
Average daily gain (lb.) .....	1.59	1.43
Average carcass score .....	85	73

#### Nutrition

Twenty-four Shorthorn steers averaging 689 pounds in initial weight were used in a study of the effect of feeding grain on pasture. Rate of gain during the first 70 days for no-grain and grain-fed steers was 3.01 and 2.33 pounds per day, respectively. However, over the entire 91-day feeding period the grain-fed steers gained slightly, but not significantly, faster than those not receiving grain (2.31 and 2.52 pounds per day (respectively)). Grain-fed steers had a significantly greater area of eye muscle, but on the basis of the value of the extra gain obtained, feeding grain was not justified.

A 24 milligram implant of stilbestrol in 12 of the above steers significantly increased daily gains over the controls (2.66 and 2.16 pounds per day, respectively) in both grain-fed and no-grain steers. The greater increase due to stilbestrol was in cattle which did not receive grain. Dressing percentage, carcass grade, weight of trimmed fat, tenderness, and moisture content of the lean were not altered by grain feeding or stilbestrol implant.

In an experiment involving 30 Hereford steers of 867 pounds average weight the effect of oral administration of stilbestrol was compared to subcutaneous implantation, when the steers were fed a ration high in corn silage and low in grain. Both methods of stilbestrol administration significantly increased daily gains over controls (control — 2.30, oral — 2.76, implant — 2.71 pounds per day), but there was no significant difference between the two methods of stilbestrol administration. No significant differences were found for trucking shrink, dressing percentage, hide weight, weight of trimmed fat, carcass grade, area of eye muscle, tenderness, or moisture content of the bone. No undesirable side effects were noted.

A hormone-like growth promoting material, BDH 217, implanted in 12 Hereford steers fed high moisture corn failed to affect significantly rate of gain or other

characteristics studied. Feeding at levels of 50, 600, and 1,600 milligrams per head daily also had no significant effect on rate of gain during a 98-day feeding period.

A 12 milligram implant of stilbestrol in lambs running with their dams on pasture, while growing from 45 pounds to market weight, increased average daily gains over control lambs.

BDH 217 implants of 120 or 240 milligrams in 45-pound sucking lambs on pasture failed to increase rates of gain during growth up to market weights.

A study of the value of high moisture shelled corn stored in a plastic bin showed that the grain froze and bridged badly, and became mouldy and badly fermented before the end of the trial, due to difficulty in removal. As the corn was not relished by steers, ground wheat was fed on top of the corn. Despite these conditions, steers on feeding trial gained at an average rate of 2.2 pounds per day, had an average dressing percentage of 58.3, and all graded A.

Four newly-born calves were given defatted colostrum, and then fed a simulated milk diet, very low in vitamin E, based on skim-milk powder, stripped lard, and dextrose with added minerals and vitamins. Each calf received a different experimental treatment: no supplement, alpha tocopherol orally in corn oil, selenium in a water solution, and alpha tocopherol plus selenium. The calves were fed these diets for approximately three months with no external signs of muscular dystrophy. On slaughter, the calf receiving selenium revealed mild dystrophic lesions histologically.

The efficacy of parenteral copper therapy was investigated in four herds afflicted with hypocupremia in Eastern Ontario. The animals were injected intramuscularly with 400 milligrams of a cerate of copper glycine, providing an equivalent of 120 milligrams of copper per dose. Serum copper values increased to approximately normal levels in about 10 weeks. Then the levels declined gradually to the original hypocupremic state in four to five months. There was an improvement in milk production and the general condition of the animals during this entire period. This type of treatment was considered inadequate unless the therapy is repeated at least three times a year. The manganese content of the forage in the "copper deficient" areas was found to be lower than that of forage from other parts of the Province. However, the free-choice feeding of a mineral mixture containing 1.1 gram of manganese (as  $\text{Mn SO}_4$ ) per ounce to two herds did not elevate serum copper levels to normal values.

Twelve gilts fed a ration of which 36 per cent was corn silage and 64 per cent commercial sow ration were compared in rate and economy of gain, litter size, and numbers with 12 gilts fed the commercial sow ration. Rates of gain for the silage-fed gilts and the normally fed gilts were 1.27 and 1.61 pounds per day, respectively, and rearing costs per pound of gain for a 112-day period were almost the same. No outstanding differences were observed between the litters from the pigs on the two treatments. Average litter size at birth for silage- and normal-fed sows was 9.7 and 9.2 pigs, respectively. It was concluded that corn silage can be effectively fed to bred gilts to reduce costs of rearing during their gestation periods without any apparent adverse effects on the resulting litters or the general health and condition of the sows.

Intramuscular injection of iron at the recommended levels into baby pigs was found to be about equal to oral administration in its ability to prevent anemia. Some discolouration of hams was observed. In preliminary trials higher dosage levels resulted in superior performance.

Studies with rats fed a simplified diet (whole milk powder, sugar, salt, iron, and thiamine) showed that 6 p.p.m. of copper was adequate for normal growth and



hemoglobin formation. Molybdenum in excess of 300 p.p.m. depressed growth, even in the presence of 15 p.p.m. of copper. In a copper-adequate ration (6 p.p.m.), 100 p.p.m. of manganese largely overcame the growth depression resulting from 150 p.p.m. of molybdenum. Manganese also appeared to limit the accumulation of copper and molybdenum in the liver, induced by supplementation with molybdenum. Inorganic sulphate reduced the accumulation of molybdenum in the liver caused by the addition of molybdenum to the simplified diet.

Studies with rabbits showed that supplementation of a simplified diet (powdered milk, sugar, alphacel, salt, iron, and vitamins A and D) with methionine (12,000 p.p.m.), or inorganic sulphate (3,000 p.p.m.), or vitamin B<sub>12</sub> (30 p.p.m.) had no alleviating effect on growth repression produced by added molybdenum (50 to 200 p.p.m.); but in one trial the addition of manganese (100 p.p.m.) was effective. Neither low manganese (2 p.p.m.), nor added molybdenum (up to 200 p.p.m.), caused alopecia, achromotrichia, or any impairment in osteogenesis. Additional manganese in the rabbit diets reduced high blood copper levels, and both manganese and sulphate reduced high blood and liver molybdenum resulting from high dietary molybdenum. Three p.p.m. of copper in the simplified diet were adequate for normal hemoglobin formation.

Molybdenum was added to a commercial laboratory chow diet fed to hamsters at levels ranging from 0 to 3,000 p.p.m., in experiments of 10 to 14 weeks' duration. Levels up to 1,000 p.p.m. were without effect on growth, and no symptoms of toxicity were evident. At 2,000 p.p.m., growth was depressed and half of the animals died. There was some greying of the hair coat in survivors. At 3,000 p.p.m., mortality was about 80 per cent.

### Housing and Management

Acceptance tests were carried out on two types of wood trusses which might be used in farm buildings. The trusses were ring and bolt connected W — wood — truss, and glued and nailed plywood plate connected W — wood — truss. The ring and bolt connected truss failed under a total load of 31 pounds per square foot, which is well below the recommended design load of 45 pounds per square foot. The glued and nailed truss failed under a total load of 76 pounds per square foot. The truss designs were those recommended by a state in the United States, but the commonly available Canadian timber grades were used.

An investigation was made to determine the precision in terms of variation and accuracy of a metering device and spring scale for the weighing of milk for production testing, and to ascertain the precision of butterfat tests determined from meter samples. Springless scale weights and conventional ample tests served as standards of accuracy. The average daily per-cow-deviation of the Milk-O-Meter weight and of the spring scale weight from the control scale was minus 0.09 and plus 0.11 pounds of milk respectively, with the differences being statistically significant but non-significant in a practical sense. The variation among meter units was not significant. Levels of production, breeds, and levels x breeds did not significantly affect the meter sample weights or butterfat tests. On an overall basis, the meters met the Dairy Science Association accuracy requirement, which states that 90 per cent of all weights must be within 0.5 of a pound or 3 per cent of an accurate scale's weight. The spring scales on the 0.5 of a pound tolerance basis failed to give weights within the required accuracy. Ninety-five per cent of the meter sample tests were within 0.2 per cent of the conventional sample test, a rate which is quite satisfactory. Meters such as those tested in this experiment are quite reliable for use in production tested herds.



## POULTRY

### Breeding

Experiments were conducted to determine the combinability for egg production of a number of pure strains of White Leghorns. One strain cross showed to particular advantage.

Basic research was carried out to show that the colour phenotype and sex of chickens had a great effect on the incidence of the undesirable character — melanin deposition in the abdomen of broiler chicks.

Studies to determine certain inherited characteristics in the fowl have included the preparation and standardization of reagents, and the preliminary blood typing of inbred lines of fowl established for this purpose.

Strains of Large White, Medium White, and Small White turkeys are being tested as to growth rate, feed efficiency, and finished carcass for turkey broiler production.

### Nutrition

After 44 weeks of egg production, the results indicated that the inclusion of supplementary phosphorus in an "all-vegetable" basal diet containing 0.38 per cent total and 0.11 per cent inorganic phosphorus did not improve egg production or feed required per dozen eggs. Nor could differences be demonstrated in body weight maintenance, egg weight, egg shell quality, or bone ash percentage. Hatchability of fertile eggs was not influenced by the dietary treatments. Thus, it would not appear possible to assay feed phosphates for laying hens with diets of natural feed ingredients. It would also appear that the recommended phosphorus level for laying hens is too high.

Assuming the phosphorus in dicalcium phosphate to be 100 per cent available, the average estimates of phosphorus availability in soft phosphate in four chick assays were 47.5, 48.0, 50.3, and 47.0 for a mean value of 48.2 per cent, based on bone ash. The evidence indicates that chick weight data will yield as precise estimates as bone ash. In one assay, the average estimates of the availability of phosphorus in  $H_3PO_4$ , as compared with dicalcium phosphate, taken as 100 per cent, were 131.5 and 125.4 per cent, based on weight and bone ash, respectively. In a second assay, the curves for dicalcium phosphate and  $H_3PO_4$  did not prove parallel, and thus, precise estimates could not be made. However, in setting up the assay, the  $H_3PO_4$  phosphorus was assumed to be 120 per cent as available as that in dicalcium phosphate, and there were no significant differences in the results, based on weight or bone ash, between the two products. These results indicate that  $H_3PO_4$  is a highly available source of phosphorus for chicks.

Mixing soft phosphate and  $H_3PO_4$  in the proportions of 1:1 or 2:1 produced self-drying products which could have practical use. Assays of the products indicated that the availability of the phosphorus is considerably enhanced by acidulation. The results of another experiment indicate that acidulation with concentrated  $HCl$  will also enhance the availability of the phosphorus in soft phosphate. However, this produces a wet, sticky product which would not appear to have practical application.

The results of fluorine toxicity studies with chicks indicate that the depressing effect of fluorine on weight is greater in the presence than in the absence of dietary fat. Fluorine depressed bone ash percentage markedly with diets deficient in phosphorus, there being less depression as the phosphorus level approached adequacy,

and an increase in bone ash percentage at an adequate level of phosphorus. Fat additions to the diets resulted in increased weight in the absence of added fluorine, and decreased weight in the presence of fluorine. The results indicate that the levels of fat and phosphorus in the diet influence the toxicity of fluorine as supplied by sodium fluoride.

There are reports suggesting that the relatively high fluorine content of soft phosphate may limit the value of this product for poultry feeds. That the fluorine in soft phosphate is unavailable to chicks, and is not toxic, was established in two experiments. In one experiment, assays were conducted to compare soft phosphate with dicalcium phosphate, both in the presence and absence of 6 per cent dietary fat. In both instances, the curves for growth and bone ash proved to be parallel, and the estimates of availability were similar in the presence or absence of added fat. Further evidence for the lack of toxicity of the fluorine in soft phosphate was the finding that equal weight and feed efficiency were obtained with chicks, when the recommended level of available phosphorus was provided with either dicalcium phosphate or soft phosphate in equicaloric and equinitrogenous diets.

Fluorine added either as sodium fluoride (0.21 per cent) or in colloidal phosphate, providing 0.09 per cent fluorine in a chick diet adequate in calcium and phosphorus, caused a significant increase in the alkaline phosphatase activity of plasma and bone at four weeks of age, but had no effect on growth, bone ash, or the phosphatase activities of liver, kidney, and intestinal mucosa. The data suggested that plasma phosphatase levels in chicks may be an indication of fluorosis in bones, but would not be a suitable criterion in an assay of the availability of phosphorus in supplements containing appreciable amounts of fluorine.

The recommended phosphorus requirements of chicks have been based on the use of relatively poorly available sources of phosphorus. In a preliminary experiment using a central composite rotatable design and  $\text{H}_3\text{PO}_4$  as the source of supplementary phosphorus, it was found that levels of 0.9 per cent calcium and 0.22 per cent phosphorus gave chick weight, feed efficiency, and bone ash, not significantly different from the results with higher levels of calcium and phosphorus.

The results of an experiment indicate that chickens can tolerate up to 0.5 per cent of common salt in the drinking water, both in the absence of added salt in the diet and in the presence of 0.5 per cent dietary salt. The use of drinking water containing 0.75 per cent salt was extremely toxic when given with feed with or without added dietary salt.

Supplementing chick broiler diets with corn fermentation solubles ("Mazoferm") caused an increase in chick weight in the absence of an antibiotic but no growth response in the presence of zinc bacitracin. There would appear to be a sparing relationship between the unidentified factor(s) in "Mazoferm" and zinc bacitracin.

Experiments to compare the value in the growth of chicks of feeding new antibiotics and antibiotics which have been used previously indicated that a significant growth response could not always be demonstrated by the addition of previously used antibiotics. In all trials the amount of growth response was closely associated with the amount of contamination of the environment and the level of antibiotic employed. An increase in number of viable aerobic bacteria and coliforms as well as a decrease in numbers of lactobacilli and enterococci were associated with improvement in chick growth, when penicillin and oleandomycin were added to the basal diet.

Studies to assay the extent of sensitivity to penicillin and oleandomycin of 186 bacterial cultures isolated from the intestinal contents of chicks previously fed diets in the absence and presence of these antibiotics revealed that the isolates showed



a high degree of resistance to both antibiotics, but that the percentage of organisms resistant to penicillin at certain levels was greater than that of those resistant to oleandomycin.

Preliminary investigations on procedures for determining the metabolizable energy of poultry feeds have shown that the chromic oxide index method is more precise than is the total collection technique.

A "New Process" sunflower seed oil meal and rapeseed oil meal, prepared commercially by solvent extraction with a preliminary expeller treatment, were used as sole protein supplements in chick starter rations. The N.P. sunflower seed oil meal was superior nutritionally to expeller processed meal, but still required lysine supplementation to make it equivalent to solvent processed soybean oil meal, as judged by chick growth from day-old to four weeks of age. The N.P. rapeseed oil meal was inferior to soybean oil meal and was not improved by lysine supplementation.

In the living chick it was found that beta carotene was converted to vitamin A in the duodenum which had been isolated by ligatures, even when the common bile and pancreatic ducts entered the alimentary canal distal to the final ligature used for isolation. Severing the duodenum from the alimentary canal did not inhibit conversion, but, when the blood supply was ligated, no conversion took place. It appeared that carotene was being converted to vitamin A through a series of intermediates with a time lag of about five minutes from the injection of carotene to the production of vitamin A.

Supplementation of an "all-vegetable" laying diet with the fermentation product "Vigofac" did not improve egg production, feed efficiency, egg weight, egg shell quality, or hatchability, in an experiment carried over a 44-week period. This indicated that laying hens maintained on litter do not require a source of the "fish factor" or "whey factor" activity, since previous work has shown that "Vigofac" is a source of these factors.

Laying hens maintained in battery cages have the ability to retain insoluble grits in their gizzards for some four to five months. However, the amount retained decreased with time, and there was considerable individual variation.

The inclusion of 4 per cent animal fat, 5 per cent unidentified factor sources (2.5 per cent fish meal with solubles or 2.5 per cent dried whey) or both supplements combined, in mash diets for turkeys, caused an increase in weight at 4, 8, and 12 weeks of age. On the other hand, none of the supplements resulted in an increase when the diets were in crumble or pellet form. The results indicate that crumbling or pelletizing of feed reduces the requirement for energy and unidentified factors. Since most commercial feeds are being sold in crumble or pellet form at the present time, this is evidence of the advantage of using crumbled and pelleted feeds in conducting applied research in poultry nutrition.

In studies with tranquilizers, neither acepromazine nor hydroxyzine caused a significant improvement in the weight or feed efficiency of chicks to four weeks of age. On the other hand, hydroxyzine resulted in improved weight and feed efficiency in turkeys reared on slatted floors but a slight decrease in weight and feed efficiency in turkeys reared on deep litter. The diet x environment interaction proved to be highly significant, statistically. The results suggest that hydroxyzine may be of value for turkeys reared on slatted floors.

In a study designed to determine the relative importance of feed and strain in the finishing of turkey broilers, it was found that strain exerts a greater influence than the diet. Thus, it would appear possible to take advantage of large, fast-



growing, highly efficient strains of turkeys for the production of turkey broilers, provided that they have been selected for ability to put on finish at suitable market weights.

## UTILIZATION OF PLANT AND ANIMAL PRODUCTS

### Dairy Products

A sediment tester which determined the sediment from farm bulk tanks was developed in 1957. This procedure was compared with apparatus which has been developed in the United States. The College sediment tester seems to have the better educational value with producers, and is being used by part of the industry.

The value of the sterile, wax-coated paper pipettes in taking milk samples was studied. Such pipettes might be used when glass pipettes and an autoclave were not available. The pipettes were found to be sterile, but they were not rigid enough to hold sufficient quantity of milk at one sampling. Modification is necessary to make these pipettes useful to dairy fieldmen.

The usefulness of the resazurin test for the estimation of the quality of milk held on the farm in bulk coolers was investigated during the winter and summer seasons. Twenty shippers were chosen in the Guelph area, to include as wide a range of conditions as possible. Samples of milk were taken weekly from all the shippers and analysed for standard plate, coliforms, psychrophilic counts, and three resazurin tests. One of the resazurin tests was carried out according to standard methods, but, for the other two, the milk was pre-incubated at 12.8°C. for 18 hours, one with dye added before, and the other with the dye added after the pre-incubation period. As a further check, a catalase test was carried out to detect the presence of abnormal numbers of leucocytes. The results showed that the standard resazurin test is liable to be too lenient with bulk cooled milk. The modified test in which the dye was added first appeared to reflect most closely the conditions on the farm, but might prove too severe by present standards. This modification appeared to be the most sensitive to the presence of psychrophiles, and is fairly sensitive to leucocytes. The other modified test appeared to exaggerate the results of the standard method.

A study of plastic pipe for milk pipe lines in dairy barns indicated that it is satisfactory. The milk from this line was examined bacteriologically and organoleptically. Different methods of washing and sanitizing the pipe lines were used, with no adverse effects on either the milk or the pipe.

Studies were commenced to survey lactobacilli in Cheddar cheese with regard to their importance in producing Cheddar cheese flavours. More than 400 lactobacilli cultures have been received from various sources, and, to date, preliminary characterization of 100 isolates into seven distinct groups has been completed.

Studies have been undertaken to determine the synergistic effect of micro-organisms on protein degradation and flavour development in Cheddar cheese made from pasteurized milk. Seventy of 450 cultures isolated from raw milk have displayed proteolytic and lipolytic activity, and are being tested further, by chromatographic methods, to determine their role in Cheddar cheese flavour development. The proteolytic cultures which were isolated were used to inoculate vats of pasteurized milk, and over 100 vats of milk were made into cheese. Examination and grading of the cheese indicated that the cultures did not produce the desirable raw milk flavour in pasteurized milk cheese.

In an attempt to explain some of the differences which have been found in curd tension of milk from different breeds of cattle, the casein has been studied by paper

electrophoresis. A method has been developed for fractionating casein by this procedure.

$\beta$ -carotene and lycopene have been used to replace annatto for colouring cheese. The desirable ratio of  $\beta$ -carotene to lycopene to match the annatto colour was established. These pigments gave satisfactory results when used in process cheese and cheese spreads, but Cheddar cheese, made with these pigments, developed flavour and colour defects on storage. The flavours in the ripened cheese were objectionable and the use of these pigments is not recommended.

Cheese dips are a new product on the market and have definite appeal for snacks and appetizers. A number of formulae were tested and the dips were submitted for consumer evaluation by the student body. A method was devised to determine the amount of adhesion of the cheese dips. Satisfactory dips were produced which had high consumer appeal and are competitive with similar products in supermarkets.

### Meat and Poultry Products

Results of tenderness tests made with a shear meter from 36 steer carcasses indicated that wide variations in tenderness exist within each of the top two Canadian grades of beef, and that these grades are not correlated with tenderness.

Results with the shear meter indicated that commercial enzyme preparations were not effective in increasing tenderness of beef under the conditions of one cooking method, namely "Swissing."

Studies to improve egg holding conditions on the farm indicated that an egg cooling cabinet held at 50°F. will maintain egg quality as well as a walk-in cooler at 50°F. Eggs stored in a cooling cabinet for seven days, in wire baskets, and in sealed 15-dozen fibre cases maintained a slightly higher Haugh unit value than eggs stored on Keyes trays or left uncased, respectively.

Spray oiling by the use of an aerosol-can type sprayer helped to maintain superior egg quality over that of eggs left unoled, after holding for 4, 7, 10, and 14 days, respectively, in both a farm type egg cooling cabinet and in a walk-in cooler maintained at 50°F., at 60°F., and at room temperature of 70-75°F.

Further studies confirmed that eggs stored in plastic film bags maintained a consistently higher Haugh unit value than did oiled eggs, when both were stored up to six months at 30°F. While a slight mould growth was evident on some of the plastic-bag stored eggs at the end of the fourth month, and also at five and six months, there was no apparent increase with time. After tempering, any evidence of mould disappeared with no evidence of penetration through the shell.

In a co-operative project, a study was conducted to determine the accuracy of grading eggs for quality in Canada. It was found that graders were able to distinguish between the two qualities of eggs graded, as indicated by the correlation found between grade and Haugh unit value. It was also evident that graders adjust their grading to seasonal differences, distance of grading station from the market, and surplus production periods, but still succeed in separating the better eggs from the poorer.

In comparing the meat yield of six strains of White turkey broilers, the medium size strains dressed out somewhat better than the large or small strains, but differences were small. Also, there was no consistent effect on dressing percentage related to either high or low protein finishing diets fed.

### Vegetables, Fruits and Frozen Foods

Eleven varieties of rutabagas grown in 1958 had superior quality as a frozen product, compared to the Laurentian variety, six varieties were poorer in quality. No variety produced a satisfactory canned product. The mean ascorbic acid value of the 18 varieties when harvested was 29.1 milligrams per 100 grams fresh weight (range 16.2 to 37.4) and 25.6 following storage for four months at 32°F. and 92 per cent relative humidity.

An objective method employing a photoelectric colorimeter was developed for the determination of colour changes in the syrup of canned cherries. Optical density values of 4-fold diluted and buffered syrup, measured at monthly intervals, revealed a progressive increase in colour intensity. This increase was remarkably linear and strongly indicates a simple causal factor or a relatively simple chemical process.

### Cereal Grains

Shelled corn of moisture content up to 35 per cent was stored successfully in an air-tight, fibreglas-reinforced, plastic bin. The major difficulty encountered was in providing for easy removal of corn from the bin.

## DISEASE, INSECT AND WEED CONTROL

### Diseases

Twenty-four seed-dressing chemicals were evaluated, in a co-operative project, for their effectiveness in controlling seedling blight and surface-borne smut diseases. The information was made available in a mimeographed report: "An appraisal of some seed treatment products for sale in Canada in 1959."

Eighteen chemical preparations (nine commercial and nine experimental) were tested locally for their effectiveness against seed rot, seedling blight, and smut in oats grown from naturally infested seed. All preparations containing mercurials gave satisfactory control of these diseases, but non-mercurials were unsatisfactory.

Investigation of stunting and lodging in winter wheat showed that this condition was being caused by the foot- and root-rotting complex of pathogenic fungi *Ophiobolus* and *Cercospora*.

### Cercospora

Lodging of oats, as reported by a number of farmers and on College plots, was found to be caused by the fungus *Septoria avenae* which is normally a leaf-spotting pathogen, only occasionally affecting the culms.

A series of isolations from tomato plants subject to root rot and wilt disturbances has yielded *Colletotrichum atramentarium* as a possible causal agent. It also appeared that other solanaceous plants such as pepper and egg plant may be possible hosts of this organism.

Commercial plantings of Laurentian turnips in Brant and Norfolk Counties have been badly damaged by a virus which appears to be of the cabbage black-ring virus group. However, it appears to be of a different type from that known in England.

A study of the wilt condition in peas has proved that the causal agent is *Fusarium oxysporum* f. *pisi* Race 2. This established the identification and the presence of this disease in Ontario. These findings are of considerable significance since the



commercial varieties of peas now used in Ontario are completely susceptible to this disease. The study also indicates that other legume crops may be carriers of the disease, but do not exhibit outward symptoms. This possibility may be of considerable importance to growers of legume crops, and may also affect the principles of present day crop rotations.

Further studies with the tomato disease known as "streak" have verified the thesis that more than one strain of virus is responsible. A strain of tobacco mosaic virus has been isolated from the streak complex. Research has also established the role of virulent and avirulent virus strains in the complex and the effect of air temperature upon the intensity of the disease expression in the tomato.

The use of a passive haemolysis test employing sheep red blood cells to differentiate between strains of *Streptomyces* has shown that, although cross reactions between the various cultures are common, the test has proved to be the most sensitive measure of antibody activity employed to date.

The soil perfusion procedure has been found to be the most successful method of isolating and enumerating the large numbers of actinophages in soil. Continued studies on two *Streptomyces scabies* actinophages have shown a marked variation in serological relationships and host specificity.

Continued studies have confirmed that genetic recombination is one of the causes of variation among strains of *S. scabies*. Attempts to find new improved methods for the isolation of nutritionally deficient mutants were unsuccessful. While it has not been possible to hybridize *S. scabies* and other *Streptomyces* spp., attempted crosses between a strain of *S. scabies* and one of *S. griseus* yielded rare colonies with characteristics apparently derived from both parents.

Powdery mildew of strawberries was epiphytotic in second year plants at Guelph in 1958. Six selfed lines of everbearing strawberry selections were evaluated for resistance to this disease. One line showed great promise in that 219 plants out of 234 appeared to be immune, while in the second best line, only 72 plants out of 275 were immune. Of 14 strawberry varieties, Louise appeared to be the only one immune to powdery mildew. The variety Armore, which has shown marked susceptibility to the disease, was the first variety to be affected in 1958, but other varieties were as seriously affected late in the season.

Dodecylguanidine (Cyprex) was used on apples as the only fungicide in comparative tests with five other commonly used materials during the entire 1958 season. Included in the Cyprex test plot were bearing and non-bearing Northern Spy, Delicious, Golden Delicious, McIntosh, Spartan, and Fameuse — about 30 trees in all. Each of the other test plots comprised the same varieties, with the exception of Golden Delicious. Although sprays were applied just prior to very low temperatures (high twenties) during the blossoming period, there appeared to be no russetting or other harmful results to fruit or foliage, except on Golden Delicious fruit which was quite severely russeted. Cyprex appeared to be compatible with the insecticides used. Further observations and tests indicated a satisfactory storage performance of fruit from trees sprayed with Cyprex.

In a study of septicemia of adult honeybees, an organism isolated from infected bees was found to be identical with *Bacillus apisepcticus*. Feeding tests with antibiotics showed that aureomycin and terramycin had a strong inhibiting effect on the organism. Since terramycin is already used by beekeepers to control other brood diseases, it was suggested that this compound, at the rate of half a gram per gallon, be used where septicemia was a problem. A survey of Ontario beekeepers showed that the disease was not too widespread or serious in 1958.

### Insect and Pest Control

Two hundred newly synthesized organic compounds were screened for insecticidal and phytotoxic properties. During a seven-year period, 1,522 compounds have been screened and 3 per cent showed promise. Certain organo-phosphorus compounds persisted as toxic residues for unanticipated long periods of time.

Seven species of wasps (5 ichneumon and 2 braconid types) and two species of tachnid flies were found to be parasitic in the European skipper, a new pasture pest in southern Ontario. The economic importance of this insect is increasing and insecticidal control may be advisable in some areas.

Late in the season, huge aphid (Green Peach species mostly) populations built up on potatoes in some areas. The aphicides, Malathion, Diazinon, or Systex, at rates usually effective, did not provide adequate control. Thiodan, a new insecticide, was effective.

A community baiting programme in the Church-Birmingham-Shrewsbury area against the European earwig resulted in effective control.

In five generations no established resistance to lindane developed in *Sitophilus granarius* (granary weevil, MW strain), although lindane-tolerance and possibly vigour-tolerance were manifested.

A histological study of granary weevil larvae (GG and MW strains) indicated that the mycetomes of the MW strains are free of microorganisms. Methyl bromide-resistant GG strain weevils also appeared to be free of mycetomal microorganisms.

### Weeds

Atrazine, an analogue of Simazine, was tested at a number of locations in 1958, and proved to be superior to Simazine as a pre-emergence herbicide on corn under dry and lumpy seedbed conditions. Atrazine will be used to a limited extent by farmers in 1959.

Amine dinitro has been tested extensively as an early post-emergence weed control in soybeans, and was placed on the recommended list for 1959.

The butyric forms of 2,4-D and MCP have been tested sufficiently to warrant their introduction on a trial basis in 1959. These chemicals appear to be a most useful selective herbicide for weed control in forage legume seedlings.

A study of the penetration and persistence in soil of Simazine [2-chloro-4, 6-bis (ethyl amino) -s-triazine], applied to a fallow soil classified as Guelph loam, at rates ranging from 1 to 40 pounds per acre of the 50 per cent commercial product, was initiated in May 1958. Soil samples were taken periodically throughout the summer and their Simazine content determined by a chemical method. At the end of three months, an average of 35.6 per cent of the applied herbicide was still present. Penetration, on a percentage basis, was found to be greater for the smaller rates of application.

No difference was found in the effects of 2,4-D on the germination of seeds from wild carrot plants which were themselves susceptible or resistant to 2,4-D. Elongation of radicles in the presence of 2,4-D was also similar. However, pre-emergence treatment of soil with this herbicide resulted in a marked reduction in the emergence of susceptible seedlings in comparison to resistant ones. *In vivo* studies indicated that the respiration of resistant plants was stimulated to a greater extent than was that of susceptible plants on a short time basis. Experiments supported the theory that resistance to 2,4-D is related either to rapid metabolism of the herbicide, or to adsorption on inactive sites within the resistant strain.

## OTHER FUNDAMENTAL STUDIES

### Analytical Procedures, Assays and Measurements

Quinalizarin and related hydroxyanthraquinones have been studied as oxidation-reduction indicators and as colorimetric reagents for oxidizing agents. These reagents are effective in sulphuric acid solution and, in the case of pentavalent vanadium, the method is more sensitive than standard procedures.

Equipment was designed, machined, and assembled for fundamental studies of the flow of water in porous media.

Radioactive tracer equipment has been assembled for research in plant and animal biophysics.

A  $C^{14}$  scintillation probe detector is being developed for studying interstitial activity in living plant and animal tissue.

The glutamine content of the protein-free plasma of chicken blood has been measured qualitatively, and the presence of this amide in the plasma, confirmed qualitatively by paper chromatography.

Studies revealed that 700 clinically isolated strains of *Staphylococcus aureus* exhibited a complete lack of resistance to the antibiotic Vancomycin. The antibiotic affected cell permeability, and interfered with the synthesis of cellular nuclear acid. Attempts to produce a Vancomycin-resistant mutant strain by X-ray irradiation and other methods have not been successful.

### Enzyme Properties

Studies have been undertaken to determine the role of microorganisms in the production of pectolytic enzymes responsible for the softening and deterioration of cucumber pickles during fermentation. Of 227 cultures isolated, 164 have proved to be pectolytic in nature. Preliminary studies have been conducted on their various properties and characteristics.

Studies have continued on the effect of antilactic dehydrogenase on cancer and leukemia. Two serologically distinct lactic dehydrogenases have been demonstrated in the rabbit and characterized. A greatly altered ratio of these two enzymes has been observed in the plasma of rabbits bearing two transplanted adenocarcinomas. The possible diagnostic application of this observation is being explored.

The addition of optimum amounts of magnesium chloride to the rations caused pH optima for alkaline phosphatases to shift to lower values for the enzyme of intestinal mucosa, and to higher values for the enzyme of plasma of rats. These changes in pH optima in the presence of added magnesium, although not as large, are similar to those found for the phosphatases of plasma and intestinal mucosa of chicks.

### Amino Acid Studies

Purified diets containing 15, 21, and 30 per cent protein were fed *ad libitum* to chicks, and the levels of 12 amino acids, occurring as free amino acids in the plasma, were determined. Levels of glycine, isoleucine, lysine, methionine, threonine, and valine increased as the protein level in the diet increased, whereas levels of arginine, histidine, phenylalanine, tyrosine, and tryptophan remained constant, increased only slightly, or decreased. It is considered that, because of their chemical structure, the latter group respond more readily to mechanisms operating to maintain or reduce their blood levels. At a level of 8.5 per cent protein in the diet, the blood levels of



all the amino acids studied were depressed. Zein, added to this low protein diet, caused a marked reduction in the level of free lysine in the plasma.

Injection three times weekly of a solution of citrovorum factor into chicks receiving a lysine deficient diet did not prevent the development of achromatous feathers; this experiment suggests that the feather pigmentation symptom is not due to an inadequate *in vivo* conversion of folic acid to citrovorum factor, under conditions of lysine deficiency.

The growth initiation of washed cells of the root nodule bacteria, *Rhizobium meliloti*, in a glucose-mineral salts medium by certain compounds has been traced to the ability of these compounds to chelate toxic copper ions. The uptake of iron by non-growing cells of this organism was extremely rapid, and the rate of entry was not affected by simultaneous inhibition of the cellular energy supply. When histidine- $2\text{-C}^{14}$  was added to non-growing cells, it was readily incorporated into the pool where it underwent degradation, with the resulting synthesis of other radio-active amino acids, principally glutamate.

### Nutrition and Physiology of the Honeybee

A third acid has been isolated from the mixture of acids present in royal jelly. It has been characterized and shown to be a homologue of traumatic acid. A fourth acid is now being investigated.

A method of synthesizing 10-hydroxy-2-decenoic acid,  $\text{C}_{10}\text{H}_{18}\text{O}_3$ , the major acid in royal jelly, is now being developed. The geometrical isomerism of this acid is also being studied.

No marked differences were found between royal jelly and worker jelly with respect to proteinaceous constituents.

Nutritional balance during the first three days of larval life may be the decisive factor in the sexual development of the queen and worker honeybee.

A high level of calcium appears to have a beneficial effect on nectar production in red clover. The increase is apparently not a simple pH effect. Too high a ratio of magnesium to calcium is unfavourable.

Studies with radioactive sucrose indicate that nectar sucrose is re-absorbed and re-utilized in the flower of *Streptosolen jamesonii*.

### Studies of Aquatic Plants

In ecological studies with wild rice, *Zizania aquatica*, it was found that the potential yield in rice grains is determined as the tips of the upright leaves reach the surface of the water, and before the stem elongates. The pistillate and staminate spikelets develop similarly and can be differentiated only in the later stages. Embryo development was found to be a variant of that of *Poa*, while the endosperm developed chiefly from the outside. The shattering of the panicle is the result of the formation of an abscission layer between the vestigial glumes and the callosity.

### Insect Physiology and Metabolism

A method of sexing adult *Sitophilus granarius* weevils on external features has been found.

Studies on the function of the cockroach corpus allatum in relation to its fat metabolism showed that removal of the gland did not alter the iodine number of the deposited fat.

Zinc has been found in relatively high concentration in grasshopper hemolymph. Fractionation of the proteins of hemolymph, by means of paper and gel electrophoresis, is being carried out to find any possible association between this metal and protein.

The structure of the exoskeleton of grasshoppers is being investigated by fractionation, hydrolysis of the fractions obtained, and chromatography of the hydrolysates.

### Plant Physiology

Preliminary research has been conducted on a study of bioelectric potentials and photosynthate translocations in plants.

### Weather Records

Tabulation and analysis of weather records was continued and abstracts of weather data were prepared.

## ECONOMICS OF FARMING

### Farm Management

The farm management and accounting project has continued to expand, with numbers of records having increased to over 400. Analysis was made of eight types of farms in 1957, with labour incomes averaging \$1,556, the highest since 1951. The average labour incomes for each type were as follows: (1) dairy specialty farms, with fluid milk contracts, \$2,421; (2) cash crop farms, \$2,026; (3) poultry general farms, \$1,769; (4) beef-hog, with large hog enterprises, \$1,761; (5) dairy general, manufactured milk, \$1,234; (6) beef-hog, beef cows milked, \$877; (7) beef-hog, steer operation, \$615; and (8) beef-hog, beef cows not milked, \$228. It should be noted that, in addition to labour income, the farmer had the interest on his equity (5 per cent of his equity has been deducted for the return to his capital as separate from his labour), his house (insurance, taxes, hydro, telephone, and repairs have been included in the farm expenses), his car (insurance, license, depreciation, repairs, and operating expenses have been included in the farm expense), and any home grown products used in his household such as milk, eggs, etc. If adequate allowance is made for these additions to income, this group of farmers showed a fairly good return.

The records covering the year 1958 have been checked and the analysis to date indicates that farm and labour incomes have surpassed those of 1957 by approximately \$1,200, on the average, to bring the figure within \$600 of the 1951 peak. The greatest gain has been experienced by the beef-hog farmers, especially those specializing in steers. Beef prices were high and feed grain prices relatively lower. However, the improved position is partly a result of better management practices.

Budgeting of alternative production programmes was carried out for 40 selected low income farms, in order to estimate the additional capital requirements needed to improve the earning capacity of the farms to a minimum level. Additional capital needed showed considerable variation by type of farm, and, also, was strongly influenced by current business organization. The amounts of addition credit varied as follows: beef-hog farms, \$3,750 to \$28,000; dairy specialty farms, \$3,800 to \$28,125; dairy general farms, \$100 to \$7,600; and cash crop farms, \$2,650 to \$8,000.

In a study designed to examine the application of linear programming to the selection of enterprises for a live stock farm, data from farms in Perth County were assembled and processed. Preliminary results reveal that a lack of working capital

and credit imposes severe restrictions on the type of enterprise combinations a farmer can keep most profitably on his farm. When capital in the form of cash and credit was held to \$2,500 on a one-hundred-acre farm, a cow-calf operation with baby beef and pasture-finished-steers was the most profitable enterprise. As capital resources rose, the enterprises selected underwent a slow change. Beef slowly gave way to dairy cows, and on an all-dairy farm increased capital was used for fertilizer. As capital rose still further (\$5,000 to \$6,000), the farm combined dairy cows and sows with weaner sales. Further increases in capital resulted in dropping of the cows in favour of greater specialization in hogs, first with raising weaners, and finally purchasing weaners and feeding with home-grown grain and commercial feeds.

A study of the variability of data encountered in farm management investigations revealed that any inferences about the population drawn from a sample of farms must be made with great care. Data from two studies were examined, and the variances calculated. It was found that coefficients of variation for selected components of farm costs ranged as high as 150 per cent. Such variation greatly restricted the validity of any extension of the sample findings to inferences about the total population. An extension of this study revealed that simple two-variable relationships were seldom adequate to measure the interrelation between farm management factors. From the very few factors which were related it was obvious that any statement about factor relationships will depend on the extensive use of techniques of multiple variable analyses.

During 1958, about 100 farms or businesses closely connected with farming were incorporated. Incorporation was not confined to very large farms but included family farms of moderate size. Incorporation may reduce income tax liability, ease transfer of ownership, and reduce estate tax liability, under appropriate conditions.

The co-operative project on Manitoulin Island, involving applied research and extension, has progressed most favourably. It involves four managed farms which are typical of the farming areas on the Island. A survey indicated lack of sufficient feed for the live stock and the existence of mineral deficiencies. The committee in charge of the programme established a proper accounting system, made recommendations on drainage, and developed a soil management and cropping programme for the individual farms. The programme already has substantially increased the income of these farms and has created extensive interest in better farm practices on the Island. The cattle on four additional farms are being provided with a mineral supplement, in order to check the importance of a mineral deficiency in relation to the overall situation. Favourable results are evident on these farms.

### Marketing and Merchandising

Because of unusual climate and marketing characteristics of the 1958 peach season, the two maturity grades available were not widely different. This made the study designed to evaluate the retail sales impact of specific merchandising practices for commercial fresh peaches essentially a comparison between "firm ripe" and "tree ripe" peaches, rather than between "hard ripe" and "tree ripe" maturities, as had been anticipated. Six retail outlets in the Guelph area were utilized for the three-week peak period of fresh peach sales (August 18-September 6), but, within the limits of the procedure, no difference could be detected in consumer demand for the two maturities offered.

Thirty-seven statistical series of prices, consumption, production, and incomes were consolidated and partially analysed. For the period 1936-1956, Ontario cash farm incomes from specified commodity groups were analysed. The changes in the real cash income from specific commodity groups as a proportion of total Ontario



cash farm income are presented below. The changes relate to the 20-year period and are based on average trend lines.

<i>Commodity Group</i>	<i>Changes During the Period 1936-1956</i>			
Wheat .....	from	2.5%	to	1.0%
Other Grains .....	"	3.5%	"	0.5%
Fruits and Vegetables .....	"	6.0%	"	7.5%
Tobacco .....	"	4.5%	"	9.5%
Other Field Crops .....	"	7.0%	"	7.0%
Cattle and Calves .....	"	15.0%	"	20.0%
Hogs .....	"	17.0%	"	16.0%
Dairy Products .....	"	25.0%	"	19.0%
Poultry and Eggs .....	"	16.0%	"	16.0%
Other Live Stock Products .....	"	3.0%	"	1.0%

A project investigating the retail merchandising practices and consumer preferences for butter and margarine was conducted. Butter sales and consumption averaged around 21 pounds per person; margarine averaged about 7 pounds per person. Approximately four brands of butter were merchandising per store, compared with 12-15 brands of margarine. Margarine display space was about double the display space allocated to butter. The major use of margarine was in cooking. The price of margarine averaged about half the price of butter. There were no serious consumer objections to the present packages and merchandising practices of butter.

A study of the relationships among prices of beef and beef products at the producer, wholesaler, and retail levels was made for the period 1948 to 1957. Over this period the wholesale carcass price changed approximately 1.59 cents per pound for every one cent per pound change in the producer price of good steers. This producer-wholesale price relationship was remarkably constant over the period examined. A further change of 1.41 cents in retail prices corresponded to a one cent change in wholesale prices. However, there has been a changing relationship between wholesale and retail prices, with retail prices for most cuts of beef increasing, on the average, 1.9 cents per pound per year, independent of prices at the wholesale or producer level.

### Cost Studies

A study of feed-gain relationships in hogs fed on two rations, a standard ration and a ration which included middlings, was undertaken. A starter type ration was fed from weaning to 100 pounds live weight, and a finisher type ration used to bring the hogs to market weight of 200 pounds. On the basis of the results, a quadratic relationship between the amount of gain and the amount of feed fed provided the best fit to the data. Six of these relationships were specified — one each for males and females fed on starter and finisher rations — each ration considered with and without middlings. Coefficients were determined for each relationship. The relationships and their coefficients can be used to determine the maximum profit point in feeding with variations in the price of feed and the price of hogs.

The study of costs of production of eggs for four types of poultry in Southwestern Ontario, 1956-1959, showed net average total costs per dozen to be: for the "incross-breds" group, 34.3 cents; for the "egg production" group, 37.5 cents; for the "egg production and dual purpose" group, 37.5 cents; and for the "dual purpose" group, 49.1 cents. For all groups combined, the breakdown of costs indicated 58.2 per cent for feed, 29.2 per cent for labour, 9.2 per cent depreciation in birds, and 1.3 per cent for other costs.

Analysis of the relation of late potato yields to fertilizer applications gave two different types of fertilizer response functions for each of six soil types. These response functions permit the estimation of yields, consistent with maximum net returns for various prices of potatoes and costs of the fertilizer. They also indicate the best combination of the fertilizer components for the experimental conditions encountered in the study. These combinations and the optimum amounts vary according to soil type and the prices assumed.

The number of account records sent in by farmers who are operating on a soil conservation plan increased from 33 in 1956 to 65 in 1957. While it is too early to evaluate the full effects of such a programme, a general improvement was indicated in the account analysis. These farms averaged 188 total acres, 106 crop acres, 446 total work units, 297 work units per man, and \$37,515 total investment. Total receipts averaged \$14,110 (up 37.7 per cent), total expenses averaged \$12,349 (up 23.0 per cent), and labour income averaged \$1,213. The very large change in the labour income position is, of course, in part due to much improved market prices for hogs and beef cattle during the period, but must also reflect improved practices, organization, and balance in operations.

### Co-operatives

A study of the early history and subsequent development of co-operatives in Ontario indicated the necessity of education in the Rochdales principles for sound economic organization. For the major part of its history, the co-operative movement in Ontario has been directed to the farm supply field, in contrast to co-operative development in most countries of Western Europe.

## WILDLIFE, FISH AND RANCH FUR BEARERS

### Disease

Successful experimental infestation of recently hatched cuterebrid (warble) larvae in laboratory-raised white-footed deer mice, established that the natural infestation may take place by penetration of the skin or entrance via the nasal passages or mouth.

Furunculosis, ulcer disease, and kidney disease are three bacterial diseases which have been diagnosed in Ontario sport fish in hatcheries. Furunculosis has been diagnosed also in fish from one natural water source in the Province.

A survey of the natural microflora of Ontario sport fish and the waters they inhabit is being conducted. More than 600 species of bacteria from 130 fish in hatcheries and natural waters have been isolated for study and identification.

### Nutrition

It has been shown that liver is not a necessary ingredient in mink rations which are based on either frozen fresh water fish or horse meat.

Preliminary experiments have shown that mink can be raised successfully on a "dry" ration.

Information has been obtained on the nutrient content of some natural deer foods by analysing the foliage of browse plants (mountain maple, white cedar, and round leaf dogwood), for carotene, crude protein, ether extract, and crude fibre.

## Wetlands

Artificial drawdowns of impounded water levels early in the growing season encourage the marginal growth of desirable waterfowl plant food. Waterfowl marshes dependent on surface run-off water require a depth of at least three feet over most of their area for optimum breeding conditions.

## Survey

A farm survey (380 farm families) of hunting and fishing in Southern Ontario was completed. Findings include the following: 73 per cent either hunted or fished, and 37 per cent did both; 93 per cent of the families that hunt hunted within 15 miles of home; 87 per cent of the families that fish fished within 15 miles of home; 24 per cent of the families that hunted or fished made at least one more distant trip annually; each family that hunted or fished averaged 15.1 hunting and 9.7 fishing outings annually, and spent \$29.01 on hunting and \$20.25 on fishing equipment, travel, etc. Forty-six per cent of farm families that fished fished for recreation, and 52 per cent of the hunters hunted for recreation and/or predator or pest control on their own or neighbours' land. Trapping occurred on 24 per cent of the farms surveyed, and 6 per cent of the owners received some revenue from fur trapping on their farms. Eighteen per cent allowed free trapping rights to outsiders. Some damage from wildlife, within the previous five years, was reported by 41 per cent of the farmers. Animals that caused damage in the order of importance are: raccoon, fox, deer, rabbit, and pheasant. Eighteen per cent of the farmers posted against trespass, and of these, 70 per cent permitted access on request. Fifty-eight per cent of the farmers welcomed true sportsmen if permission was requested, although 35 per cent of these reported some property damage.

The literature on the history and status of Ontario fish and wildlife legislation has been compiled.

## EXTENSION AND SERVICES

Members of the College staff in all departments are called on throughout the year for advice and assistance by thousands of individuals and many scores of organized groups. To answer all these requests adequately, whether by letter or by personal visit, takes more time than is generally realized. In addition to speaking at public and scientific meetings, taking part in radio and TV programs, judging at numerous fairs and shows, and assisting in other activities of farm groups, members of the staff have also visited thousands of farms to deal with various individual problems. They have prepared bulletins and circulars and numerous articles for the farm press and other journals. In addition they have been responsible for a regular service of news releases and photographs which have been sent to the daily papers and other appropriate outlets.

Another important division of the College's work is to be found in the series of short courses, conferences, field days, and meetings arranged by the various departments. These bring to the College not only professional agriculturists and practical farmers, but also a variety of other people ranging from bankers to clergymen who are interested in rural life and its problems. The total attendance at the many short courses runs into thousands.

In the College laboratories, analyses have been made of over 25,000 samples of soil, of nearly 2,000 samples of milk and milk products, of over 600 samples of well water, and of hundreds of other samples submitted by farmers in various parts of the Province.



Continued assistance given to the Soil and Crop Improvement Association has involved the threshing of thousands of samples and the computation of yields. For distribution to Elite Stock Seed Growers, Foundation Stock Seed of 20 varieties of field crops is being maintained; 14 of these were developed at O.A.C. Lactic cultures and pullorum antigen have been produced and widely distributed. Aid has been given in the spray service and the warble fly control programmes and help provided in weed control and in the problems occasioned by plant diseases and injurious insects.

Special mention can be made here of only a few of the extension programmes carried out by various departments.

1. The Ontario Hatchery Supply Flock Policies for chickens and turkeys are administered by the Department of Poultry Husbandry; the Department of Microbiology supervises the pullorum testing. The total number of chickens tested was 1,477,401, compared with 1,335,314 the previous year. The reaction on the first test was 0.02 per cent, compared with 0.03 per cent in 1957-58. The majority were tested by the rapid whole blood method. The total number of turkeys tested was 114,398, compared with 67,696 the previous year. No pullorum reactors were reported, compared with 0.01 per cent reaction in 1957-58. All turkey blood samples are tested by the tube method.

2. Apiary registration in Ontario in 1958 totalled 135,418 colonies operated by 3,126 beekeepers. Apiary inspection was carried out in 3,655 apiaries, totalling 57,709 colonies. American Foulbrood was found and destroyed in 1.6 per cent of these colonies. Approximately 84 disease samples were diagnosed in the laboratory.

3. The Farm Building Plan Service drafting office of the Department of Engineering Science has produced complete sets of plans and catalogues for the Poultry Housing and Equipment Series and the Special Structures Series. An estimated 100 sets of plans were included. Hundreds of farmers have sought advice in consultations at the Plan Service Office and many visits have been made to individual farms. A programme was arranged with one of the larger lumber companies to inform the dealers of new developments in farm structures.

4. The Department of Agricultural Economics organized a conference of three and one-half days at O.A.C. for assistant managers and credit officers of rural banks, and organized six Regional Finance Schools for managers and other leaders at Ridgeway, London, Walkerton, Guelph, Peterborough, and Kemptonville. Over 300 bank managers, 85 assistant managers, and a considerable number of other lending officials participated. These conferences were designed to promote a better understanding of agriculture, and to show the effects of new techniques and organization on incomes and on security for credit. The Department assisted in farm management training in 19 three-day schools and 13 night schools. Farm Management Associations now number 31, of which 12 sent in sufficient records for analysis.

The Department of Public Relations performed the function of an extension service unit and visual aid centre for the Ontario Department of Agriculture as well as for the College. During the year it produced thousands of photographic prints and slides, hundreds of feet of 16mm film and microfilm, and several motion pictures, some with sound. It also organized and conducted courses in photography and projectionist training, in the use of exhibits, and in layout and design for the Associate Diploma Course, the Short Courses, and the faculty of both the Ontario Agricultural College and the Ontario Veterinary College. It printed and distributed many thousand copies of numerous circulars and prepared extensive exhibits for the major fairs in Ontario. It organized the annual Winter Short Course, attended by over 400 students, the Farm and Home Week, attended by 15,000 rural people, and arranged programmes and accommodation for the many groups visiting the College, in all some 52,000 people.

### MACDONALD INSTITUTE

The total attendance for the year was 220; 40 were enrolled in the Diploma Course; 179, including one special student, were enrolled in the Degree Course; in addition, there was one special student taking only one course. Again this year, third year students were required to live out of residence, and probably students from other years will have to live out of residence next year.

A third Option in the Fourth Year of the Degree Course, Home Management, was offered for the first time in 1958, with eight students enrolled. A study is being made of the prerequisites and the curriculum of the Diploma Course.

Members of the Faculty, in addition to their teaching and research work, answered approximately 140 requests for information and planning in the fields of foods and nutrition, home planning and management, textiles and clothing. The staff members spoke to several thousand listeners by means of lectures, radio, and TV appearances; they published 35 articles, many in a newspaper series on Art in the Rural Community. Some members gave regular extracurricular classes to the students of the Visual Arts Society, and some conducted summer courses under the Ontario Department of Education in Toronto.

Approximately 300 members of the International Home Economics Conference, representing 30 countries, spent two days at Macdonald Institute in August.

In co-operation with the Department of Physics, research was begun on the study of the effect of iodine on nylon and protein fibres, wool, silk, and vicara. The staff also assisted in the preparation of cheese dish recipes for a bulletin to be compiled in co-operation with the Department of Dairy Science.

## *Ontario Veterinary College*

There was considerable expansion of activities at the Ontario Veterinary College during the fiscal year ending March 31, 1959.

At registration, 1958-59, the total enrolment for the undergraduate course was 264 compared with 277 in the previous year. By over-registration in the first year to compensate for failures it hoped to maintain a quota of 60 students per year. It is evident, however, that the College fell short of its total quota by 36. It is expected that an increase in qualified applicants for first year will enable the school to utilize its teaching facilities to capacity, and thus help to provide the increased number of veterinary surgeons needed to service the livestock industry in Canada.

A new building to house the Department of Medicine and Surgery came into use at the end of the year. This building provides modern facilities which will enhance the clinical aspects of the teaching programme.

With an expansion in the research programme there is also an increase in the number of graduate students in veterinary science registered in the School of Graduate Studies of the University of Toronto.

Reports of the regional diagnostic laboratories at Kemptville and Ridgetown indicate that a wider sphere of service to the veterinarians and livestock owners is being developed. Plans for two additional regional laboratories have been discussed. These are expected to provide a readily accessible service for geographic areas of the province which are remote from the existing laboratories.

### ADMINISTRATION

On March 31, 1959 the faculty of the College consisted of 55 permanent, 9 temporary, and 2 part-time members. The office, technical, and maintenance staff was comprised of 105 permanent, 33 temporary and 36 casual employees.

### Appointments

New appointments during the year were O. W. Sack, D.V.M. to the Department of Anatomy as Assistant Professor; J. H. Reed, D.V.M. as Lecturer and P. W. Pennock, B.Sc., D.V.M. as Graduate Assistant to the Department of Medicine and Surgery (Division of Small Animal Medicine and Surgery); S. V. Blizzard, B.Sc., M.R.C.V.S. to the same Department (Division of Surgery and Obstetrics) as Graduate Assistant; J. D. Mongeau, B.A., D.M.V., M.V.Sc. to the Department of Pathology and Bacteriology (Division of Poultry Pathology) as Lecturer; J. I. Raeside, B.Sc., M.S., Ph.D. to the Department of Physiological Sciences as Associate Professor; C. P. P. FitzGerald, B.A., B.Sc., M.R.C.V.S., D.V.P.H. as a Graduate Assistant to the Library; W. J. B. Ditchfield, D.V.M. to the Kemptville Laboratory as a regional veterinarian.

### Resignations

Those who resigned during the year were: W. C. D. Hare, B.Sc., Ph.D., M.R.C.V.S., from the Department of Anatomy; T. J. L. Alexander, B.Sc., M.R.C.V.S. and L. M. Cobb, B.V.Sc., M.R.C.V.S. from the Department of Medicine and Surgery; D. S. Smyth, B.A., B.L.S., and V. N. Gordon, B.A. from the Library.



### Degrees, Honours, and New Awards

Having completed the requirements at the Ontario Agricultural College, E. B. Meads, D.V.M., D.V.P.H., received the degree of Master of Science in Agriculture from the University of Toronto.

D. C. Ingram, D.V.M., M.V.Sc., of the Department of Pathology and Bacteriology, completed the requirements and obtained the degree of Doctor of Philosophy from the University of Cambridge.

### Publications, Addresses, and Other Activities

Published articles which have appeared in the scientific literature numbered 50. The extension staff has continued to cooperate with the Director of the Information Branch, Department of Agriculture, in supplying topical news releases on animal health.

At the annual meeting of the Canadian Veterinary Medical Association held in Winnipeg last July, two members of the faculty were elected to high office in that association. Dr. J. A. Henderson became President and Dr. James Archibald was re-elected vice-president.

In February, the Principal accepted an assignment as special consultant for the Pan American Sanitary Bureau, World Health Organization which took him to Latin America for a period of six weeks. He visited the veterinary faculties of eight universities and several institutions associated with public health and veterinary medicine.

### Reorganization of Departments

The Department of Physiology was combined with the Department of Research to form a single unit—the Department of Physiological Sciences. A group in the Division of Medicine, working in pharmacology, was transferred to this new department. This reorganization was accomplished with the view to strengthening both the research and teaching activities in physiology and related subjects.

### Special Lectures on Civil Defence

Two lectures on Civil Defence were given to faculty members and fourth and fifth year students by Dr. E. J. Young, Deputy Director of Civil Defence Health Services, and Dr. F. C. Pace, Medical Consultant of the Special Weapons Section, Civil Defence Health Services.

### Visitors

Among the distinguished visitors to the College were Dr. Teodoro Ramos Saco, Dean of the Faculty of Veterinary Medicine of the University of San Marcos, Lima, Peru, and Professor J. J. Bullen, Head of the Pathology Department, the Rowett Research Institute, Bucksburn, Aberdeenshire, Scotland.

In February, 1959, five faculty members of the School of Veterinary Medicine, Saint Hyacinthe, Quebec visited the Ontario Veterinary College to discuss veterinary education and other matters of mutual interest. Representatives of the Wellcome Research Laboratories, Langley Court, Beckenham, Kent, England again visited the College.

In November, 1958 a group of senior students from the School of Veterinary Medicine, Saint Hyacinthe, Quebec were entertained by our senior students. In the same month the final year students of the Pharmacy course, University of Toronto were also entertained.

## COLLEGE FUNCTIONS

### The Annual Convocation and Baccalaureate Service

The Annual Convocation was held on May 16, 1958. The degree of Doctor of Veterinary Medicine was conferred on fifty-two students, seven of whom had attained First Class Honour standing. The students were addressed by T. W. M. Cameron, T.D., B.Sc., M.A., Ph.D., D.Sc., M.R.C.V.S., F.R.S.C., President of the Royal Society of Canada, and Director of the Institute of Parasitology, Macdonald College, McGill University.

The Baccalaureate Service for the 1959 graduating class was held on March 22, 1959. The sermon was given by Rev. Mariano di Gangi, of St. Enoch's Presbyterian Church, Hamilton, Ontario.

### The Student Chapter, American Veterinary Medical Association

The annual banquet of this organization was held on February 24, 1959 in Creelman Hall. The speaker was Jacob Markowitz, M.B.E., M.D., Ph.D., M.S. of the Department of Physiology, University of Toronto. After the banquet the students held their annual "At Home and Open House" at the Ontario Veterinary College. In addition to the displays in the various departments, the still uncompleted new Medical-Surgical Building was a big attraction.

### Alumni Association

The Ninth Annual Meeting of the Alumni Association was held at the Royal York Hotel on January 29, 1959. Steps were taken towards having the Ontario Veterinary College Alumni Association incorporated as a non-profit organization. A report on the Centennial Fund gave encouraging evidence that a substantial gift would be available as a contribution to the centennial celebration in 1962.

### The School of Graduate Studies

During the academic year, 1958-59 there were 15 graduate students registered in the School of Graduate Studies, University of Toronto, to complete degree requirements in various departments at the Ontario Veterinary College. Nine of these students are enrolled for their first year of study, the remainder are re-registrants.

At the annual spring Convocation held on May 16, 1958 the degree of Master of Veterinary Science was conferred on two graduate students. At the fall Convocation in November, 1958 one student received a Doctorate of Veterinary Science and one the degree of Master of Veterinary Science.

## *Horticultural Experiment Station*

In June 1958, Extension Branch personnel, including Agricultural Representative and assistant, Home Economist, and specialists in horticultural and engineering extension moved into the renovated former Administration Building. This permitted Inspection and Farm Economics personnel, formerly stationed at Grimsby, to move into the building just vacated by extension personnel. This building was at one time occupied by the Director of the Station and was then known as "The Residence". This concentration of Ontario Department of Agriculture services facilitates inter-office collaboration and gives an opportunity to growers to make several contacts on a single visit, if so desired.

The major building project during the year was a residence and implement shed at the Grape Substation three miles from the Station office. The man living in this house will do a large part of the work on this grape farm making unnecessary loss of time in transporting workers back and forth from the home farm. Also, the more important implements required at the Substation will be kept there, with a further saving of time on the road.

### **Grape Soil-management Studies**

This study deals with the effect of various cover-crop and fertilizer treatments on growth and yield of grapes, mainly of the Concord variety, extending over the past eight years. The experiments, located in five grower vineyards, deal with length of cultivation period, type of cover, and effect of added fertilizer materials. The growers co-operating in this are H. A. Staff and Sons, Jordan; W. B. Cody, St. Davids; Grant Laundry, Beamsville; R. vanGelder, Beamsville; J. W. Orr, Fruitland. In the Staff vineyard, the three dates for cessation of cultivation are June 1, July 1, and August 1. The June 1 treatment using Italian ryegrass as a cover crop, has resulted in a marked decrease in growth and yield, as determined from individual vine pruning and crop weights. This decrease has been partially offset by the application of supplemental nitrogen. The yield decrease is apparently due to the shortness of the cultivation period, resulting in increased and earlier competition from the cover crop for moisture and nutrients.

Additional nitrogen applications, regardless of treatment, have resulted in increased yield. In the Staff vineyard, the overall yield increase due to the application of ammonium nitrate has been about 4, 1¼, and 2½ pounds per vine in the years 1956, 1957, and 1958. Similar responses to nitrogen applications have been obtained in the other four vineyards. Mineral fertilizer applications, begun in 1956, have shown no significant yield increases, although in 1958 the application of 0-12-24 in three vineyards appeared to result in a slight yield increase.

Early cessation of cultivation where a volunteer weed cover was allowed to grow did not result in the decrease in yield that showed up where Italian ryegrass was sown following the same date of last cultivation. It must be kept in mind, however, that the final effect of the early cover seeding may be quite different from the results yet obtained. It is quite possible that improved soil physical conditions resulting from these treatments may eventually make up for the earlier competition of the cover for moisture and nutrients.



### Leaf-analysis Service, 1958

In 1958, a leaf-analysis service was available, for the first time, to Ontario peach, apple, and grape growers. The establishment of this service followed several years of research work, and was the result of wide-spread grower interest. This interest was aroused largely by the realization by the grower that leaf analysis offered the best means of determining the nutrient requirements of his tree-fruit and grape crops. In addition, by adjusting the nutrient levels of his trees or vines, the grower is able, in many cases, to improve the quality of his fruit while at the same time maintaining high production.

During the 1958 season, 373 leaf samples were received from growers wishing to utilize the service. The samples, along with the fee of five dollars per sample, were collected by extension personnel, in most areas, the Fruit and Vegetable Extension Specialists. The analyses were made, and reports sent out by the Horticultural Experiment Station. All reports, with recommendations as to changes in fertilizer programme were in the hands of the growers by the end of December, 1958.

Of the 373 samples received, 280 were apple, 63 peach, and 30 grape. Over half of the apple samples were of the McIntosh variety.

Problems which showed up most frequently from the leaf-analysis results were nitrogen deficiency, potassium deficiency, and nitrogen excess. Magnesium deficiency was also a problem in one or two apple-growing areas, particularly Eastern Ontario.

In an effort to extend the advantages of the leaf-analysis service to growers of other tree fruits, research work is at present underway on sour cherries, and Bartlett and Kieffer pears. Some 700 leaf samples were taken from grower orchards in 1958, as a first step in establishing optimum nutrient levels for these crops. It is hoped, as a result of further research work, that all tree-fruit crops will be covered by the service within the next five years.

### Strawberry Variety Certification

Foundation stock for a proposed provincial strawberry plant certification scheme was grown during the summer of 1958 in a screenhouse located at the Horticultural Experiment Station. This screenhouse is 54 x 27 feet and consists of a wooden frame covered with 32-mesh saran screening. The soil in the screenhouse was fumigated with methyl bromide prior to planting. The plants grown in the screenhouse (nuclear plants) were obtained from the Horticultural Division, Central Experimental Farm, Ottawa, and U.S. Department of Agriculture and were free of viruses (as determined by indexing) and nematodes. Applications of malathion were made at 10-14 day intervals during the season and protective sprays for powdery mildew and two-spotted mites were applied as needed. As a check against possible virus infection during the summer, some plants were re-indexed by Ottawa in October and all were found to be free of viruses. Plants produced in the screenhouse were dug November 25 and stored bare-rooted in polyethylene bags at 29-30°F. at Horticultural Products Laboratory. These plants are to be distributed to two commercial plant growers who will propagate them during 1959 on fumigated soil and under isolated conditions for their own use and sale in 1960 to other plant growers. All of these plant growers must propagate them under specified conditions and the plants so produced will be certified and should be available to Ontario fruit growers the spring of 1961.

The following varieties and quantities of each were produced in the screenhouse during 1958.

<i>Variety</i>	<i>Nuclear plants set spring, 1958</i>	<i>Runner plants for distribution spring, 1959</i>
Sparkle .....	8	931
Catskill .....	4	275
Empire .....	3	382
Premier (U.S.D.A.) .....	3	540
Redcoat .....	5	844
Cavalier .....	3	920
Grenadier .....	2	343
Guardsman .....	2	187
Pocahontas .....	4	293
Earlidawn .....	2	208
Redglow .....	1	98
Tenn. Shipper .....	1	75
Midland .....	5	90
Sen. Dunlap .....	2	213
Gem .....	1	270
Total .....	46	5,669

### Viceroy and Vinered Tomatoes

To a growing list of fruit and vegetable varieties originated at this Station, two tomatoes were added in 1958. They are called Viceroy and Vinered and originated from crosses made in 1946 — Bounty x Rutgers and Early Chatham x Rutgers respectively. They were bred particularly for earlier maturity for processing purposes and will permit factories to begin operations on tomatoes earlier in the fall. Varieties presently being used tend to ripen in cooler weather with resultant poorer quality and often a reduction in yield through frost damage. Consequently, growers lose tonnage and the processors lose both in quantity and grade of product.

Both varieties produce small plants so closer spacing than normal is desirable. Vinered ripens before Viceroy and its fruits are smaller. However, many of its fruits ripen at the same time and consequently it may be a good variety for mechanical harvesting operations. Both varieties are satisfactory for home-garden and fresh-market purposes. Their special value will be in the cooler areas of commercial tomato production.

It is estimated that 150 acres of these varieties were grown in 1958 and that it will be 750 acres in 1959. In the spring of 1959 the Station sold 16 lb. and 31 lb. of seed of Vinered and Viceroy respectively. In 1960 the seed trade will take over the distribution of these varieties.

### Vista, Venus, and Vic Sweet Cherries

Three new sweet cherry varieties resulting from Station breeding work were named in 1958 — Vista, Venus, and Vic in order of maturity.

VISTA (35031) is a Hedelfingen x Victor seedling maturing about with Black Tartarian but it is firm-fleshed and much larger in size than Tartarian. Being firm it is more subject to splitting in wet weather. However, because of its size and attractive appearance, there has been much interest shown in it.

VENUS (35042) is a Hedelfingen x Windsor seedling, shiny black in colour, and follows Vista by about five days. It is not as firm-fleshed as Vista and therefore less subject to cracking. In the station orchard, where pollination conditions are excellent, some years the trees have had an overload of fruit. This may not happen often under commercial conditions.

VIC (27026) is a Bing x Schmidt seedling maturing with Windsor but of better size and darker colour. As a canner, it is superior to Windsor and is satisfactory for freezing and for maraschino purposes.

All of these varieties have already had wide distribution under number as the following table shows.

	<i>Scions</i>	<i>Buds</i>
Vista .....	702	11,102
Venus .....	554	12,341
Vic .....	134	5,980

In addition, the nurseries have been distributing these varieties for several years but no record of quantities is available.

#### Juice Viscosity in Relation to Fruit Maturity (Products Laboratory)

Many changes take place as a fruit matures to a useful condition. The most obvious changes are skin colour, softening of tissues, and development of sweetness and flavours typical of the fruit in question. These changes do not always proceed at the same relative rate and this is one of the reasons why measuring any one of them is not a completely satisfactory measure of the maturation of a fruit. There are important commercial, legal, and academic needs for a maturity index.

The viscosity of the juice of a fruit is the resultant of many factors. Early work here indicated that regular changes of considerable magnitude take place in the viscosity of the juice of several fruits. It was found also that viscosity was exceedingly sensitive to each laboratory manipulation. In 1957 and 1958 fruit from 6 orchards of McIntosh apple and 6 orchards of Veteran peach was used for viscosity measurements. The work is being published in detail. Present conclusions are that though juice viscosity still appears to be a promising index of maturity, techniques for using it will have to be greatly improved.

#### Variety Testing (Products Laboratory)

About 75% of the man-hours available are used in the testing after harvest of hybridized or imported varieties of fruit and vegetables. Most fruits are tested after canning and freezing, but grape is tested as wines. Fresh tomato is tested for vitamin C, and after canning whole and as juice. If a variety is of interest after its initial tests then other products are made from it to determine its utility.



The past year has been one of the most active in the history of K.A.S. With an increase in enrolment of over 50%, one of the greatest problems has been to provide accommodation in residence, dining room and classrooms. No one factor can be pointed out as the only reason for this larger enrolment but it is evident that farmers realize the need for greater education to cope with present day problems in agriculture.

Agriculture — two-year course — juniors .....	72
seniors .....	38
Advanced — one-year course in Agricultural Mechanics .....	16
Home Economics .....	20
Dairy Course .....	25

57.4% farming at home or on their own,  
90.5% either farming or working in some phase of agriculture.

During the past year the poultry plant was rearranged to make best use of the new poultry building which was used to advantage for student instruction during the school term.

Construction was started in the fall of 1958 on a new kitchen so that the dining room could be enlarged to include the former kitchen, permitting the seating of the entire student body in the dining room. Dormitory space was over-taxed necessitating some 35 male students being housed in the basement of the men's residence. This presented many problems in administration and supervision beyond the capacity of present staff.

In addition to expansion in teaching and instruction the School has been called upon to provide additional services in extension work. Many farmer organizations, both junior and senior, have used the buildings, grounds and livestock for meetings and demonstrations.

The Civil Service of Canada for the fifth consecutive year used the facilities of the residence and classrooms in the mechanics building for a four weeks' officers' course from August 18th to September 12th.

The K.A.S. is indeed grateful to the thirty-five friends and organizations who have contributed very generously in bursaries, scholarships and prizes to assist students in financing their attendance in the various courses.

The reports of the several divisions of the School which follow give a comprehensive review of the work of each division.

## AGRICULTURAL MECHANICS DIVISION

During the year the work of this division consisted of lecturing on agricultural engineering subjects to the students in the junior and senior years in agriculture and the advanced course in agricultural mechanics during the school term and doing field work and agricultural engineering extension throughout the year.

The following subjects were taught during the school term: drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, use of explosives, tinsmithing, metallurgy, forging, welding, plumbing, farm machinery, motor mechanics, woodworking, farm buildings, rope work, care and sharpening of tools, the care and operation of earth moving machinery, machine shop practices.

The advanced course was taken on a number of field trips. These included a trip through the foundries of Dominion Engineering Works, Montreal, and trips to prominent farms in Eastern Ontario to inspect drainage, buildings and farm management practices.

This division is also indebted to the following for placing with this division machinery on consignment for use in classes and demonstrations: Massey-Harris-Ferguson Company Limited; International Harvester Company Limited; Cockshutt Plow Company Limited; Allis-Chalmers Company Limited; J. I. Case Company Limited; Goodison Industries Limited; Beatty Bros.; Niagara Brand Spray Company; London Concrete Machinery Company Limited; Sass Manufacturing Company; F. E. Meyers Company Limited; DeLaval Company Limited; Ketchum Manufacturing Company.

### Extension and Field Work

The extension and field work consisted chiefly of drainage service, building service, 4-H Tractor Clubs, agricultural night classes and farm meetings.

Under drainage service, 354 farmers were called on and received drainage assistance of one sort or another. Blueprints for 158,900 feet of profile and systematic drainage plans for 2,143 acres of land were prepared for farmers of Eastern Ontario. Thirteen tile drainage installations were inspected. During the year, this division co-operated with the Agricultural Representatives in planning and conducting 28 drainage field days.

Some 205 farmers were visited and were given assistance and advice on ventilating stables, constructing new or remodelling farm buildings. Sixty building plans were prepared and distributed. Forty-eight extensive building or remodelling jobs were completed and 74 advisory ventilation calls were made. Approximately 400 prints of farm building plans from the Canadian Farm Building Plan Service were distributed.

Other engineering extension included surveying and advising on the layout and installation of septic tank and sewage disposal systems. Septic tank forms are loaned from the office of the Agricultural Representative or from this division. Extension work included advising on the installation of water systems, the layout, construction and equipping of bathrooms, planning and checking electric wiring installations and assistance in adjusting and repairing farm machinery.

Two staff members acted as instructors and supervised 16 4-H tractor clubs which had a total membership of 218 members. They attended club meetings, conducted 16 achievement days, conducted coaching classes and visited the majority of these members at their homes.

During the winter months the division co-operated with the Extension Branch, The Ontario Department of Agriculture, in supplying instructors at 4 night classes conducted at Sydenham, Athens, Milford and Vankleek Hill on the following subjects: gas welding, electricity, and farm buildings. These classes were held one night a week for twelve weeks. The attendance ranged from 10 to 15 in each class. At Athens there were two classes in welding on the same night. One class started at 6:30 and the second started at 8:30 p.m.

During the year, speakers were supplied for a number of farm meetings which included breed association barn meetings, county spray schools, council meetings and ditch meetings. These gatherings were addressed on stable ventilation, misuse of electric wiring systems, drainage and other engineering subjects. Staff members of the division prepared and delivered a number of radio talks.

### ANIMAL HUSBANDRY DIVISION

This division was responsible for the lectures and laboratory work in animal husbandry with the junior and senior students in agriculture. In addition, it was responsible for the operation of the farm and extension work in animal husbandry. More emphasis, this year, was placed on animal nutrition and animal breeding, both in lectures and laboratory work. The division was also responsible for the coaching of a group of four senior students, who took part in the Inter-School Judging Competition at the Royal Winter Fair. A tour was organized for the senior students to visit outstanding farmers in Eastern Ontario to study the farm programme carried on by each farmer.

More demonstration and testing work was done on the farm. Some of these tests were undertaken for the Grassland Day which was held on the farm in co-operation with the Eastern Ontario Soil and Crop Improvement Association. The tests were as follows:

*Plastics for Silage.* Two kinds of plastic were used to store silage. A black polyethylene, six m.m. thick, was used on two stacks of grass and one of corn silage. Twenty-five tons of green crop were put in a pile on June 4th and covered with black plastic at a cost of one dollar per ton. The silage was fed from this in October with no spoilage. The plastic was not damaged in any way.

Black plastic was used to cover a pile of bales of green crop. This did not prove successful, as the bales could not be packed tight enough to exclude the air.

Black plastic was also used to cover a stack of corn silage with excellent results.

A second plastic, "vinyl" 8 m.m., was used to cover a stack of twenty-five tons at a cost of two dollars per ton. This silage was opened on December 28th and fed to beef cattle until March 30th. There was no spoilage and very little freezing, in spite of the very severe winter. The plastic was not damaged in removing and can be used again.

*Green Feeding or Mechanical Grazing.* A new type of feeding wagon was used for green feeding the dairy herd. This type of feeder reduced waste considerably over the types used in former years. Green feeding was used to supplement the regular pastures.

*Surface Silo.* A surface silo was filled from which the dairy heifers self-fed during early winter. There was considerable waste with eighteen inches in the bottom of the silo being refused by the cattle.



*Rye for Silage and Pasture.* Green rye, at heading stage, was put in a stack for silage. This was excellent quality when fed in the fall to the dairy cows.

Rye was sown on August 1st and pastured the second week of September. This saved pasturing the meadows in the fall. The rye was left to be harvested in 1959. *Hay.* In spite of rather adverse weather conditions during the haying season, some of the best hay ever put up was stored. A hay crusher, roller type, was used on all the hay. A day less was required to cure crushed hay than uncrushed hay.

A small amount of hay was baled at forty per cent moisture to which was added sodium metabisulphite at the rate of eight pounds per ton. Considerable difficulty was experienced in applying the material at a uniform rate. The hay was very dusty and brownish in colour. It was not readily eaten by the dairy cattle.

*Swather.* A self-propelled swather was used in harvesting the grain crop. This speeded up harvest considerably over direct cut with the combine. The six foot combine handled the eight foot swath very satisfactorily. In comparing actual combining time using direct cut versus swathing and combining, swathing was about one-third faster.

### Livestock

The demand for breeding stock from the swine herd was very light. Litter size per sow was good with an average of 9.9 pigs weaned. Ninety-two pigs were marketed with ninety-six per cent making Grade A carcasses.

The demand for breeding stock from the North Country Cheviot flock far exceeded the supply.

A barn on the farm was remodelled to make a pen barn to test beef cattle under the Ontario Advanced Registry Policy. The division was responsible for the supervision and care of the bulls on test.

The dairy herd, Holsteins, Ayrshires and Jerseys, was used considerably by the students for classroom work and by a number of groups visiting the School. All records reported are in 305 day division.

### Herd Average

<i>Breed</i>	<i>Number Completing Test</i>	<i>Lbs. Milk</i>	<i>Lbs. Fat</i>	<i>Average Test</i>
Holstein .....	22	12,851	515	4.0
Ayrshire .....	3	9,788	395	4.04
Jersey .....	3	6,736	370	5.49
<i>Herd Index</i>	<i>Milk</i>	<i>Fat</i>		
Holstein .....	130	134		
Ayrshire .....	131	130		
Jersey .....	113	116		

Considerable time was spent during the year for extension work. The following is a summary of the meetings attended:

Meetings addressed .....	12
Fairs, Achievement Days and Judging Competitions .....	14
Meetings as Committee member .....	21
Groups visiting farm only .....	10
Radio broadcasts .....	2

Assistance was given in the following ways:

1. Secretary, Ottawa Valley Sheep Breeders' Association.
2. Secretary, Eastern Ontario Yorkshire Breeders' Association.
3. Director, Ottawa Winter Fair, and Vice-Chairman of Swine Committee.
4. Member of the Sheep and Swine Committee of the Central Canada Exhibition and the Ottawa Winter Fair.
5. Member of Sale Committee, Ottawa Winter Fair.
6. Member of the Junior Committee of the Ottawa Winter Fair.
7. Member of the Ayrshire Bull Buying Committee for the Eastern Ontario Cattle Breeding Association.
8. Member of the Committee of the Eastern Ontario Soil and Crop Improvement Associations.
9. Numerous requests for information on livestock and livestock feeding were answered by letter and office calls.
10. Twelve visits were made to prospective students during the year.

## CHEMISTRY, SOILS AND FERTILIZERS

The activities of this division are summarized under the following headings:

### Lectures and Laboratory classes for regular students

Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in agriculture; mathematics, soils and farm planning to the advanced agricultural mechanics course; and chemistry to the junior and senior classes in Home Economics. Laboratory periods in chemistry, soils and fertilizers are given in conjunction with the lecture classes.

### Extension

(a) During 1958 a total of 3,372 samples of soil were received for examination. Rapid determination tests were made for reaction, organic matter, phosphates, potash, calcium, and magnesium. Reports covering the recommendations for fertilizer use, agricultural limestone requirements and cultural practices were forwarded covering the samples received. Up to date equipment enabling the determination of the newer procedures in rapid testing has been installed providing a uniform relationship with other soil testing laboratories.

### Demonstrational and Experimental Field Work

Tests were laid out in the Fall of 1958 using a complete fertilizer based on soil tests in comparison with nitrogen, phosphate, and potash materials. The nitrogen was applied in the spring of 1959 on established new seeding in Hastings County.

Comparative tests were conducted in Renfrew County on three locations using ammonium nitrate in comparison with urea. During the year 1958 it was found that in all locations the urea outyielded the ammonium nitrate indicating that the urea form of nitrogen possessed a longer lasting effect whereas the ammonium nitrate gave a quick boost in the early part of the year but its effect on growth was not as prolonged.

Investigational trials were conducted on the available sources of limestone for agricultural purposes from the magnesium plant at Haley in Renfrew County and the Lake Ontario Portland Cement Company at Picton in Prince Edward County. The

product from the Haley plant is a very fine product all passing a 200 mesh sieve and contains a high percentage of magnesium oxide. From trials conducted at rates of 2 tons, 4 tons, and 8 tons per acre, applied when the plants were very moist from heavy dew; no burning effect was noticed, thus determining it was a safe product to use.

During the year over 30 meetings were attended where problems relating to soils, fertilizers, lime and farm fertility problems were discussed.

## DAIRY DIVISION

### Courses of Instruction

As a result of the large junior class, the assembly room of the dairy building was used as a lecture room for this class during the fall term.

A donation of \$100.00 from the Ontario Concentrated Milk Producers' Marketing Board was received for the first time in 1958. From this the sum of \$25.00 was used as a prize for the senior student standing highest in dairying. The remainder was used as prizes for the 1959 dairy course.

The instruction for the 1959 dairy course was presented in a different manner this year. Of a total of 25 who enrolled, nine remained for the first three weeks only when instruction on milk testing, mild grading and fluid milk plant operations were given. Sixteen students continued in attendance for the remaining nine weeks of the course, 14 being successful in their examinations for the Dairy School Diploma. The change in the course proved worthwhile and will be continued in the future. It permits fluid milk plant operators to get the instruction they need without devoting time to such subjects as cheesemaking and buttermaking.

### Changes in Dairy Building

The Department of Public Works painted the exterior doors, sash and trim of the dairy building, as well as the first and second storeys of the interior of the building. Partitions were also installed to provide one additional office and a small library room on the second floor. The receiving dock was also enclosed. Laboratory furniture was also secured which will allow a new milk testing laboratory to be set up in one of the basement rooms.

New equipment purchased for the building include a hydraulic cheese press, a farm bulk milk cooling tank and the installation of a flow diversion valve and control system on the high-temperature short-time pasteurizer.

### Investigational Work

During the summer of 1958, 400 samples of water used by dairies, cheese factories, creameries and milk manufacturing plants, from Hastings County east, were secured and examined for their suitability for dairy operations. Many of the samples were found to be either of a suspicious quality or highly unsatisfactory due to their high counts of Gram-negative bacteria. The examination also included total bacteria count, coliform test, and total hardness determination. The samples were forwarded in refrigerated shipping cases and collections were made by fieldmen of the Dairy Branch.

Other investigational work dealt with the preservation of lactic starters by freezing, the prevention of scaley deposits in milking machine teat cups from hard water and possible causes of open texture of Cheddar cheese. Gas forming bacteria



were shown to be present in large numbers in open-textured raw milk cheese but were almost entirely absent in cheese made from pasteurized and heat-treated milk.

### Other Services

Lactic cultures totalling 327 were supplied to 76 cheese factories and 66 dairy plants as requests were received. Babcock tests for butterfat were made on 212 samples of milk, cream or dairy by-products. Bacterial plate counts, dye reduction tests, phosphatase tests and a number of other examinations were made on samples either submitted to the School or picked up by the staff of the division as a result of special requests.

## ENGLISH AND ECONOMICS DIVISION

### Instruction

Farm business accounting has been initiated in the junior year of agriculture with summer projects assigned to give every possible student practice in the entering of actual home farm records for completion and analysis in the senior year. Lecture time in economics for both senior and junior students in agriculture has been doubled to cope with rapid changes in dynamic factors affecting farm production and marketing problems. This keeps economics firmly tied to farm business practices and the current economic scene. All senior agricultural students entered an essay competition sponsored by the Ontario Credit Union League and turned in useful written studies of farm credit problems.

In addition, this double division carried on instruction in English, public speaking, public relations, civics and dramatics.

Extra-curricular work produced a three-act play, panel discussion competition, public speaking contest, a school year book, a school paper, and literary society programs.

### Economics Extension

This division again co-operated with the Ontario Farm Economics Branch in a study of tile drainage profitability in Eastern Ontario. Assistance was given in farm accounting to graduates who have begun such work while students here. This work is increasing rapidly.

Speeches were made to agricultural organizations on current economic problems of the farmer. Leadership was supplied for panel discussions in economics such as the Regional School in Agriculture for lenders attended by some 60 bankers.

### Public Relations and School Administrative Tasks

The two staff members comprising this division addressed audiences in secondary schools and arranged the details of four open house days on which 480 secondary students visited K.A.S. for demonstrations and tours.

The head of the division, for the seventh year, was on the staff of the provincial Junior Farmers' Camp at Lake Couchiching. Public speaking competitions and debates were judged for a number of organizations.

The Ontario Department of Agriculture Radio Service worked through this division to secure and make regular tape recordings at the library sound studio.

Press, radio and exhibit advertising for K.A.S. were the responsibility of this division as well as preparation of the official calendar, details for graduation

ceremonies, scholarships and awards, regular news releases to press and radio, and secretarial duties for the school staff meetings.

### The Library

The large student body has strained library facilities past the limit of good service with the building and staff available. Cataloguing and indexing are year round specialized tasks added to the duties of the stenographer for this division.

## FIELD HUSBANDRY DIVISION

In addition to teaching all of the courses in field husbandry and weeds outlined in the Kemptville Agricultural School calendar, the field husbandry instructor was actively engaged in extension and experimental work.

### Summary of Extension Work in Field Husbandry

Addressed farmer groups on 28 occasions. These included annual meetings and summer twilight meetings of several County Soil and Crop Improvement Associations in Eastern and Western Ontario, seed fairs, field days, and conferences.

Assisted in planning the programme and in staging a Grassland Field Day at the K.A.S. and the annual Crop Improvement Conference and Weed Control Conference at the Kemptville Agricultural School.

Judged grain corn clubs and grain club exhibits; judged at seed fairs and as one of the judges of the finalists in the Ontario Pasture Competition.

Served on several committees including: Secretary of the Committee of Eastern Ontario Soil and Crop Improvement Associations; Ontario Advisory Committee on Herbicides; Eastern Section of National Weed Committee; Seed Committee of the Royal Winter Fair; the Soybean Committee of Ontario; the Ontario Corn Committee; and the Ontario Committee on Field Crop Recommendations.

Considerable time was required in answering numerous requests for advice and information on crop production and weed control problems by correspondence, telephone, office calls and personal visits.

Several radio broadcasts were prepared and recorded for the Ontario Department of Agriculture Radio Service. Assistance was provided in the preparation of circulars and bulletins.

### Experimental Work in Field Husbandry

In order to co-ordinate the experimental work undertaken at the Kemptville Agricultural School with that being done at other experimental stations in the Province, it has been necessary to serve on several committees and to attend the annual committee meetings which include:

1. The Ontario Corn Committee.
2. The Ontario Committee on Field Crop Recommendations.
3. The National Weed Committee (Eastern Section).
4. The Eastern Canada Cereal Workers Committee.
5. The Ontario Committee of Forage Crop Workers.
6. The Ontario Soybean Committee.
7. The Ontario Advisory Herbicide Committee.

This committee work requires 15 days in attendance at meetings and an equal amount of time to assemble and prepare experimental data.

The only reason that one man has been able to supervise and conduct so much experimental work along with his other duties has been the excellent co-operation and assistance received from the Ontario Agricultural College and the Central Experimental Farm in processing much of the material and the data from the tests.

The experimental programme at the School consists mainly of crop testing with some herbicide evaluation work undertaken as time and staff permit. The following statistics will give some appreciation of the nature and scope of the experimental work under way in the field husbandry division of the Kemptville Agricultural School:

986 individual plots of varieties of oats, barley, mixed grain, soybeans, potatoes, grasses, red clover, alfalfa, and birdsfoot trefoil.

200 individual plots of grass-legume mixtures.

160 individual plots of grain corn hybrids.

180 individual plots of silage corn hybrids.

125 varieties of grasses and legumes are under observation in nurseries.

TABLE 1

*ALFALFA VARIETIES 1953 SEEDING, KEMPTVILLE.  
TONS D.M./ACRE PURE STANDS*

Varieties	1958					5 year Average		
	Hay June 19	Aftermath				1954-1958		
		July 29	Sept. 8	Total	Total	Hay	After.	Total
Vernal	1.87	.96	.56	1.52	3.39	2.54	1.62	4.16
DuPuits	1.06	.85	.46	1.31	2.37	2.07	1.75	3.82
Rhizoma	1.50	.93	.41	1.34	2.85	2.30	1.68	3.98
Narragansett	1.68	.85	.50	1.35	3.03	2.29	1.66	3.95
Ranger	1.62	.95	.55	1.50	3.12	2.12	1.67	3.79
Grimm	1.44	.72	.31	1.03	2.48	2.12	1.50	3.62
Ladak	1.78	.70	.37	1.07	2.84	2.29	1.27	3.56
Mean	1.56	.85	.45	1.30	2.87	2.24	1.59	3.84
L.S.D. 0.05	.28	.21	N.S.	.35	.51			
C.V.	11.8	16.5	26.9	17.7	11.6			



TABLE 2

*ALFALFA VARIETIES 1956 SEEDING, KEMPTVILLE.  
LBS. D.M./ACRE OF ALFALFA + CLIMAX TIMOTHY*

Variety	1958					2 Year Average		
	Hay	Aftermath			Season	Hay	After.	Total
	June 23	July 31	Sept. 6	Total	Total			
M-50	4,667	2,591	1,802	4,393	9,060	5,119	3,791	8,910
M-53	4,479	2,664	1,720	4,384	8,863	5,126	3,597	8,723
Vernal	4,866	2,496	1,525	4,021	8,887	5,208	3,526	8,734
DuPuits	4,561	2,556	1,815	4,371	8,932	4,886	3,606	8,492
Alfa	4,461	2,572	1,563	4,135	8,596	5,127	3,259	8,385
Cardinal	4,473	2,530	1,328	3,858	8,331	4,968	3,249	8,217
Can. Grimm	4,000	2,557	1,635	4,192	8,192	5,630	3,244	7,874
S.C. 3503	4,620	1,595	408	2,003	6,623	4,897	2,090	6,987
Mean	4,516	2,445	1,474	3,919	8,435	4,995	3,295	8,290
L.S.D. 0.05	N.S.	376	376	366	422			
C.V.	8.1	10.5	17.4	6.5	3.5			

From the foregoing results, particularly those in Table 1, it is evident that Vernal should be the most highly recommended variety of alfalfa in this area, as it has yielded one-half ton more per acre per year than Grimm over the five year life of the stand; and possibly of more significance it yielded approximately one ton more per acre than Grimm in 1958, the fifth year of the test.

In addition to the crop testing programme at the Kemptville Agricultural School, seed is assembled for outside tests of grain corn, silage corn, soybeans, oats and barley. These plots are sampled, yields calculated and data supplied to County Crop Improvement Associations.

#### HOME ECONOMICS DIVISION

During the school term from October 14th to April 17th instruction was given in the two-year diploma course and the one-year homemaker course in home economics.

Thirteen counties were represented in the enrolment for the courses in home economics this year.

Regular classes of instruction, as well as practical work, were given in the following subjects: applied arts, clothing, home furnishings, textiles, child care, family living, health education, home nursing, foods, nutrition, and home management.

Classes in English, civics, chemistry, bacteriology, floriculture, and woodworking were provided by other divisions. The co-operation of these divisions is appreciated in making possible a well rounded out course for our students.

The K.A.S. Royal Show gave opportunity for display of various phases of home economics study, as well as participation in livestock showmanship. The Spring Fashion Show displayed achievements of home economics students to a large group of interested men and women.

Graduates of the home economics course continue to find employment in worthwhile positions, mainly as food supervisors in various institutions. There is a demand for graduates with this type of training to work along with fully qualified dietitians.

Supervision of the dining hall, and furnishing of students' residence is the responsibility of this division. Day-to-day supervision of housekeeping and meal service is carried out by a graduate of our home economics course.

Accommodation for much increased enrolment of boys was provided in not too satisfactory basement rooms. This greater number made for very crowded working conditions in the present kitchen and dining room. In September construction on a new kitchen was started. This will provide much more adequate working space, as well as modern and adequate kitchen equipment and food service facilities. This will also permit of considerable increased dining room accommodation for the coming school term.

Many visiting groups were entertained, their stay in residence varying from one day to four weeks in duration.

The total number of meals served to students and visiting groups was approximately 61,300.

#### Extension services included:

- talks and demonstrations to various women's groups such as Women's Institutes and church organizations.
- open house programs for visiting secondary school students — a series of visits on 5 consecutive days in one week.
- Women's Institute holiday group.
- visits to prospective students and to Women's Institute meetings to acquaint these groups with facilities of the school and opportunities available to graduating students.

## HORTICULTURE DIVISION

### Instruction

During the school term, a course of lectures, laboratory work, and practical instruction was given to the students in agriculture. The instruction covered such subjects as fruit growing, vegetable growing, plant diseases, destructive and useful insects, botany and ornamental horticulture. In addition the students in home economics were also given a course in floriculture.

### Demonstration and Extension Work

During the summer months, the horticulture division is responsible for the maintenance of 27 acres of campus, 15 acres of fruit trees, and about 2 acres of small fruits and garden.

Between 1937 and 1939, a block of apple trees was set out using hardy Russian root stock as a base. These root stocks included Anis, Hibernial, and *Malus robusta* No. 5. In addition a number of these trees were double worked. This means that on the root stock hardy frame trees were grown. These hardy frames in turn were budded to the desired variety of apple. The purpose of this technique is to overcome winter damage. The winter of 1957-58 has caused more damage to fruit trees in the St. Lawrence Valley than any year since 1933-34. Severe damage has occurred to the pith and to the last formed xylem. In some cases bark lifting has occurred. While the apple varieties grafted on hardy frames and roots appear to have suffered damage also, it remains to be seen whether or not they can recover better than apples grown not using this technique. The next two or three years should demonstrate whether or not this hardy root and hardy frame working technique is a worthwhile method of growing apples.

In the school apple orchards three different fungicide programmes for apple scab control were carried on. In one area the protective material Crag was followed by Ferbam and Captan. In the second area Dichlone was followed by Captan. In the third area a new fungicide Cyprex was used throughout the season. All three programmes were highly successful in providing scab free apples. The material Cyprex appeared to provide a longer residual action during August and September than did Captan.

On the campus we continue to grow trees and shrubs suitable for the area. These varieties are the ones we recommend to home owners. They are grown here to illustrate the type and suitability of each species.

Considerable assistance was provided to schools, churches, parks and home owners in planning landscape improvements. Seven landscape plans were prepared for schools, churches, etc. Detailed planting advice was also provided with these plans. As well, some 20 other public institutions were given landscaping advice. Twenty-four illustrated talks were given on a variety of horticultural subjects. Assistance in landscape problems was provided to some 92 district home owners.

During the early summer months, the apple spray service letters for local growers originated from this division. As well, some 162 visits were made to apple growers to provide them with assistance in solving their individual insect or disease problems.

## POULTRY DIVISION

Lectures and demonstrations in poultry and farm meats were given to our students in agriculture.

The School flock is kept primarily for material for class work, but we are doing some testing of pure strains of Leghorns and this year are crossing these in search of the most economical bird for egg production. One strain of Leghorns we are now inbreeding for the fifth year. On test against twelve other strains completed at Ontario Agricultural College, Guelph, last year, our own strains of Leghorns stood first in the test with an average production of 73 percent and also were the lowest in mortality (mortality  $2\frac{1}{2}$  percent) during the 26 weeks of laying test. Feed per dozen eggs on this same test was 4.30 pounds.

We purchased one new strain of Leghorns last year from British Columbia, along with a strain cross from Guelph. This year, at the present time, we are carrying on a comparison test here. To date our production for this year has been on our own inbred line — 78 percent; British Columbia stock — 68 percent; and Guelph stock — 76 percent.



We are now crossing these strains because British Columbia stock has a better egg size than our own inbred strain. We are interested in this work because we feel we can breed a bird which can be sold at a more reasonable figure than egg type birds which are being imported from U.S.A.

The breeds represented in the School flock consist of White Leghorns, Barred Rocks, Columbian Rocks, and Cornish. Approximately three-quarters of our laying birds are of Leghorn breeding now and our egg production last year was about 7,000 dozen higher than the year previous with almost the same number of birds, but more heavy birds were kept then and fewer Leghorns.

We are also doing test work with capons and capettes on feed consumption. Approximately 250 turkeys are purchased each year at the School and raised for Christmas market. Meat type birds and turkeys supply material for practical work in dressing, eviscerating and packaging.

Extension work carried on during the past year consisted mainly of Poultry Club Achievement Days and visits to farms to render assistance in feeding and management problems. Several demonstrations were given in caponizing of chickens and artificial insemination of turkeys this past year.

An annual Poultry Field Day was held at the School last June and will now be an annual affair.

The Poultry division has received excellent co-operation from the Regional Veterinary Laboratory with respect to disease problems.

The new poultry building has been a great help in providing us with space and materials, not only for our students, but for the poultry industry in Eastern Ontario.

## *Western Ontario Agricultural School and Experimental Farm*

The W.O.A.S.'s three-fold obligation to practical Agriculture education, extension, and applied research places an increasingly heavy demand upon the staff. There is a greater demand for applied research and extension. Increased enrollment in the school has necessitated more division of students for instruction — thus demanding more instructional time.

### INSTRUCTION

Total enrollment was up this past year.

97 in the Junior Year

51 in the Senior Year

Average age and academic qualifications of the enrolling students are increasing each year.

Approximately 75% of the graduates are returning to practical agriculture, most of the remainder taking positions in Agricultural Industry.

Basic agricultural principals are fundamental in instruction, but the course is amended each year to meet the needs of agriculture, particularly as they are applicable to Southwestern Ontario.

The Western Ontario Agricultural School is very appreciative of the assistance and co-operation of the following:

1. Agricultural Engineering Extension Service of the Extension Branch in allowing the Extension Specialists, stationed at the W.O.A.S., to give instruction in Agricultural Mechanics and Mathematics.

2. Ontario Veterinary College in having the Regional Veterinarians, who have laboratories in the Administration Building, give instruction in Animal Health and Bacteriology.

3. Agricultural Representatives in the Southwestern Ontario counties to assist on different occasions.

4. Ontario Department of Lands and Forests whose representatives give lectures in Farm Forestry.

Appreciation is also extended to the following for the assistance offered at various times:

Staff of the Dominion Experimental Station and Plant Pathology Laboratories at Harrow; Dominion Entomology Laboratory at Chatham; Radio and Television Stations for student and staff interviews and recordings; C & D Sugar Company; Agricultural Organizations of Southwestern Ontario; individual citizens and various companies who support the school through prizes, scholarships, and trophies.

## ACADEMIC FUNCTIONS

### Graduation

On Wednesday, May 21, 1958, the Annual Graduation Exercises were held in the Auditorium, with the Honourable William A. Goodfellow, Minister of Agriculture, delivering the Address. Dr. C. D. Graham, Deputy Minister, assisted in the Graduation by presenting diplomas to the graduates.

### Baccalaureate Service

On Sunday, March 29, 1959, the Annual Baccalaureate Service for the Graduating Class of the School was held in the Auditorium. The Address was delivered by Reverend W. A. Young, B.S.A., Public Relations Officer and Chaplain, Ontario Agricultural College.

### Student Activities

As part of their education, the students are organized to perform certain functions and carry responsibility. Such organizations are:

Student Council — which assists in general organization, discipline and social functions.

Literary Society — sponsors Public Speaking, Skits, etc.

Athletic Society — organizes and administers sports program.

Year Book — a Second Year sponsored project, financed by the students, through the sale of advertisements.

W.O.A.S. Review — a show window of some of the practical work completed during the year, including livestock and crop showmanship, and educational exhibits, which attracted approximately 1,000 visitors.

## EXTENSION

Extension plays an increasingly important role, a more detailed account is reported under Division reports, but a summary of the visiting groups is herewith submitted.

Tours and overnight accommodations when requested are organized for such groups as: County Farm Managements, Soil and Crop Improvement Associations, Horticultural Societies, Agriculture classes of Secondary Schools, District Agricultural Societies, 4-H Clubs, Junior Farmer Organizations, and groups sponsored by the Veterans' Land Act.

The W.O.A.S. served in the capacity as host to such organizations as: Ontario Potato Committee Meetings, Women's Institute Conferences, Research Workers — Agricultural Economics, Conservation and Sportsmen Workshop, Agricultural Representative Meetings, Junior Farmers' Field Day, Junior Farmer Leadership School, Bank Managers' Course, Breed Meetings, etc.

Such distinguished groups as Scientists from Russia, England, and Yugoslavia visited the School and Farm at different occasions, as well as Postgraduate Students from Chile.

The 21st Annual Farmers' Week was held the second week in January, with a record attendance. Prominent Ontario Agriculturalists and members of the staff addressed the gatherings.



## RESEARCH

W.O.A.S. is playing a greater role each year in the applied research programme, particularly in the phase applicable to crops, soils, fertilizer, and herbicides. Some 80 acres of the better land at the W.O.A.S. is being devoted to such a programme, which is described in more detail under the Division reports.

### Animal Husbandry

During the year this division was responsible for the following:

1. Management of the general farm.
2. In charge of all livestock work at the school, as well as livestock extension work in Southwestern Ontario.
3. Classroom instruction with the students in the diploma course on all subjects relating to Farm Management, Livestock, Meats and Marketing, and Farm Economics.

### Farm Production

Total acreage of the various crops under cultivation in 1958 was as follows: Winter Wheat 27; Winter Barley 4; Spring Oats 28; Silage Corn 13; Grain Corn 41; Soybeans 10; Potatoes 4; Hay 66.

The balance of the general farm is devoted to pasture for livestock maintained at the school.

All of the grain, silage and hay is fed to school livestock.

Grain yields in 1958 were high because of excellent growing and maturing weather. Hay yields were low, however, because of cool, dry weather in early summer.

## LIVESTOCK

### Dairy

Two breeds of dairy cattle are maintained in the dairy herd at Western Ontario Agricultural School. R.O.P. averages were as follows in the past year:

	<i>Milk</i>	<i>BCA</i>	<i>Butterfat</i>	<i>BCA</i>
Holstein-Friesian .....	12,692	131	494	139
Guernsey .....	9,184	117	473	121

These dairy cows are receiving no purchased concentrate in their ration. This ration is composed of corn and cob meal, oats, and raw soybeans. Emphasis is placed, however, on quality roughage. In 1958, a hay conditioner was purchased, which speeded up hay drying time and reduced the possibility of quality loss through weathering.

Following are observations with regard to hay conditioning:

1. Best results were obtained when hay was conditioned right after mowing.
2. When hay was conditioned in June, during the 1958 haying season, it could be baled the following day. Unconditioned hay containing the same forage species could not.

3. This conditioned hay was harvested in excellent condition and proved extremely palatable.

In addition to the hay conditioner, a finger-wheel rake was used at W.O.A.S. that did an excellent job with less leaf loss than with a conventional side rake. Our observations were that this rake did not shake the hay as severely, and as a result, fewer leaves were in evidence on the ground.

## Beef

Shorthorns and Herefords are maintained at the School as a cow calf proposition. These cattle are maintained on strictly a roughage program. With beef cows freshening early and producing a good milk supply for their calves, 500 pound or better calves can be weaned in the fall.

A group of steers were weighed during the winter months. Three of which were implanted with Stilbestrol; 3 with Synovex and 3 left as check. Final weights are not yet available. Excellent results were achieved by feeding Trolene in the grain ration as a warble fly control. Trolene was fed to 19 head of beef steers and dairy heifers. Only one animal in this lot of 19 showed evidence of warble grubs. Approximately 75% of the untreated young cattle had evidence of warbles.

## Sheep

A breeding flock of Southdowns and Suffolks is maintained, primarily for student use in classroom instruction. The Southdown Ram has sired the Grand Champion Market Lamb the past two years at the Royal Agricultural Winter Fair.

## SWINE

### Yorkshire Breeding Herd

A marked interest in breeding stock with desirable conformation and carrying inheritance for rate of gain and good feed conversion has been quite noticeable in the past year. As a result, sale of breeding stock from our Yorkshire herd has shown some increase. This stock has been sold primarily through our local breed organization sale, direct sale to graduating students starting in a swine enterprise or to fairly new commercial producers desiring assistance. Breeding Stock Sales totalled 12 boars — 23 bred gilts — 17 open gilts.

Using high energy ratios, such as 73% corn, 27% concentrate, or substituting rolled wheat, our Yorkshire herd has averaged approximately 5 months, 20 days to market on approximately 3.5 lbs. feed per lb. live weight gain. Although grade has been maintained at over 60% A type, a tendency to excess shoulder fat has been obvious.

To overcome this shoulder fat, and to increase length and improve feed conversion, two Canadian Yorkshire boars have been introduced, one with extreme shoulder quality and length, from 87 score parentage, the other from 93 score and with a heredity for exceptionally low feed conversion.

The first group of carcasses marketed from one of these boars had extremely good balance and measured over 33" long.

### Cross Breeding

Three crossbred sows. 2 Berkshire x Yorkshire and one Landrace x Yorkshire, were carried over and backcrossed to a Yorkshire boar. The resulting progeny did

not have the size or vigour at birth of the original crossbreds, were no larger than purebreds at weaning nor of any advantage at market weight. In addition, the Landrace-York sow became quite crippled in her hind legs and was disposed of.

The Berk-York crossbred sows, and two purebred Yorkshires have now been bred to Lacombe and Landrace boars for a trial on 3 way crossing. One three-way cross group fed out in 1958, using a Chester-White boar on crossbred sows proved most unsatisfactory, all being B or C grade. However, this merely proved that the individuals within each breed must be of excellent conformation, which the Chester-White lacked.

### Injectable vs Oral Ironing

No carry over of iron injection has been found in the hams at time of slaughter. However, only the Inferon, Imposil, Inferon 75, and Ferrovit forms have been used. Several litters with the original Inferon showed signs of anaemia in individual piglets, at three to four weeks of age. To overcome this and supplement the iron, treatment was started with oral iron at 1 day and 4 days, injection at 4 days, and sod once per week. This procedure eliminated all signs of anaemia and produced 48 to 53 lbs. weanlings at 56 days of age.

Although the new forms of injectable iron are stronger, and comparison will be tried, we will continue on the main herd use of:— oral iron at 1 day; oral iron and injection at 4 days; sod once per week, and of course creep feed as soon as litters will eat.

### Corn Feeding

Approximately 600 bushels of 30% moisture soft shelled corn, harvested with a picker-sheller was stored in an experimental cement slab silo 8 ft. x 12 ft.

This was held in storage for the engineering division to take tests until January, when two litter mate groupings of 90 lb. hogs (30 in all) were placed in the open front feed lot, a random half on crib dried shelled corn and 36% concentrate free choice, and half on high moisture (30%) shelled corn and 36% concentrate free choice.

The high moisture corn had a slight ensiled odour, was easily chewed and thus quite a palatable feed. As prior to this, all the group had been adapted to eating shelled corn; no appreciable difference in the two pens was noted, except that the high moisture group seemed to be eating slightly more corn. Although no sickness was encountered in either pen, very severe cold weather was encountered through much of the trial, thus decreasing our usual rate of gain per day on corn by about  $\frac{1}{4}$  lb. per day. (.25 lb.)

### Extension

This past year included a very full and interesting group of judging assignments, particularly 4-H Club achievement days, and 4-H Championship shows throughout Western Ontario.

The demand for assistance on management problems of specialized swine and beef enterprises continues to grow. The interest and study by swine producers and feeders of carcass quality, rate of gain, and feed consumption, is increasing the demand for tested breeding stock, and for advice in the use of pure and crossbreeding methods.



Steps have been taken, in co-operation with some area Agricultural Representatives, to initiate the development of a project type of extension programme in swine, with the hope to cut down piecemeal assistance and at the same time encourage efficient, quality conscious, profitable hog units.

## FARM CROPS

Due to the added responsibilities of this Division, it became necessary to increase the staff available to carry on certain phases of work. Mr. A. D. McLaren was appointed April 1st, 1958 so that, among other duties, more emphasis could be placed on research in Forage crops.

The duties of this Division may be summarized as follows:

- (a) Research into crop production problems, including those of cultural practices, varieties and fertility.
- (b) Distribution of seed of many classes of grain.
- (c) Extension to farm groups, including demonstration projects, meetings, etc.
- (d) Instruction in crops and crop production practices.

## Research

The increasing demand for information regarding the problems associated with Southwestern Ontario agriculture has necessitated an enlarged applied research programme. Consequently, it became necessary during the year to obtain a larger area of experimental work, both on clay and on the lighter soil types.

The Brookston clay loam plot area was therefore doubled in size to accommodate the increase, tiled in a manner suitable for a research programme, trees removed and roadways established. Concurrently, a rotation was also established on the area east of the campus on the gravel-sand ridge. While it will be a number of years before these areas are completely satisfactory for the work planned, it was necessary to use some sections for testing and the remainder for seed production during the 1958 season.

Extremely high yields of grain crops were obtained from testing areas during the season. Yields of over 150 bus. per acre of oats, 80 bus. of wheat, and 100 bus. of winter barley were not uncommon from the highest yielding plots. On the other hand, yields were disappointing with field beans, hay and pasture, and soybeans.

The trend to co-operative projects with other institutions of the Ontario, Canada, and United States Departments of Agriculture continued. Over one-half of the tests conducted by this division were in conjunction with some coordination committee. This has allowed more efficient use of facilities and simplifies the obtaining of material.

Results of variety and mixture trials were used to contribute to the "Field Crop Recommendations" circular and "W.O.A.S. Recommends".

Research concerning cultural practices included many long-term projects; potato planting and digging, tobacco topping and spacing, sugar beet transplanting, rotation and crop sequence effects, etc.

Variety and mixture trials accounted for 35 tests in 1958. A summary of the number of plots harvested in 1958 is as follows: Hybrid Corn — 634, Soybeans —

644, Field Beans — 146, Wheat — 158, Winter Barley — 241, Oats — 376, Hay and Pasture — 770, Tobacco — 32, Potatoes — 164, Sugar Beets — 16, Miscellaneous — 40, Total — 3,181.

### Seed Production

The seed production programme was reduced somewhat because of the loss of seed stocks in a fire in August 1957. However, a quantity of Registered and Foundation seed was distributed to farmers, Marketing Boards and for crop improvement projects. This programme will be enlarged as the areas and seed stocks become available.

Custom seed cleaning was eliminated from the duties of the Division because of lack of interest as well as pressure of other work.

### Extension

This Division continued to supply seed for demonstrations in each county of Southwestern Ontario. With the cooperation of the county Soil and Crop Improvement Associations, demonstration strips of varieties of winter wheat, winter barley, oats, corn and soybeans were established. Meetings are regularly held at the demonstration sites and organized, as well as informal, tours make use of them.

The members of the Division are called upon to attend meetings, conventions, etc. each year.

A summary of extension duties is as follows:

Meetings attended (Farm, Committee) .....	56
Recordings made .....	6
Crop Tours attended .....	20
Judging (Fairs and Competitions) .....	12
Conventions attended .....	15

### SOILS

The activities of the Division are —

- Extension, including County demonstrations and soil advisory service.
- Soil analysis and fertility recommendations.
- Lecture and laboratory classes given to the two-year Diploma students.
- Research as it pertains to fertility and management practices.

### Extension

In co-operation with local Soil and Crop Improvement Associations several fertility demonstrations were carried out in the local Counties. These demonstrations included: top-dressing winter wheat and grass pasture with various nitrogen fertilizers and various nitrogen levels. The nitrogen, phosphorous, and potash response on grain corn was also demonstrated.

Fertility demonstration plots were also carried out on several crops here at the Experimental Farm.

During 1958, thirty-five meetings and four crop tours were attended, five recordings made, and fifty-five farms were visited on soil advisory service calls.

### Soil Analysis

During the past year some four hundred farmers used the soil testing facilities provided by the Experimental Farm. A total of approximately thirteen hundred samples were analysed and fertilizer recommendations and lime requirements concerning each were sent out.

### Lecture and Laboratory Classes

Lectures in Soils and Chemistry were given to the Junior Year while both lectures and laboratory classes in Soils and Fertilizers were given to the Senior Year students. In connection with the laboratory course, the Senior Year was taken on five field trips during the fall and winter terms.

### Research

During this past year approximately twelve acres have been incorporated into the soils programme. Systematic tile-draining was completed on the area in early summer. This area will be devoted to soil fertility research and demonstration work.

Irrigation and fertility tests were conducted on late tomatoes and burley tobacco grown on medium textured sandy clay loam soil. Since a plentiful supply of rainfall occurred during the growing season, little if any difference in yield was realized between the irrigated and non-irrigated plots.

A study of the nutrient response on soybeans using varying rates of nitrogen, phosphorous and potash was begun. This fertilizer was applied just prior to the seed planting.

### POULTRY

#### Laying Hens

(A laying test is being conducted to provide information on the capabilities of the various franchised egg laying strains being offered poultrymen in this area).

The first pullets entered the new laying house as day old chicks on April 21, 1958.

Thirteen strains of commercial pullet chicks and two different breeds of breeding stock were either purchased or donated. The thirteen commercial strains contained one hundred and twenty-five pullets each. Eleven of these commercial strains were White Leghorns or White Leghorn cross and the balance were dual purpose breeds.

All chicks were wing banded for later identification and were brooded together under infra red lights. A commercial chick starter was used for the first eight weeks. Some whole oats were included at four weeks of age. From eight weeks of age to maturity a restricted feeding programme was used. The feeding programme consisted of an all mash grower plus oats on a full feed, free choice basis. Thus the energy in the feed was restricted during the growing period.

At eighteen weeks of age the commercial pullets were segregated into their various strains and one hundred pullets of each strain were divided into two groups of fifty pullets and allotted to separate laying pens. The balance of the pullets were placed on slatted floors, laying cages and litter floor pens.



At maturity, based on 10% production a laying ration was used of the all mesh high energy type. The lower pens received a special ration consisting mainly of wheat and corn as it was felt these were the most economical grains for use by Southwestern Ontario farmers. The upper pens received a commercial all mash laying ration.

The following data has been recorded — type of bird, day old chick price, date of hatch, mortality during the growing period, laying house mortality, average body weight at maturity, age in days at maturity, broodiness, egg production, egg size, feed conversion and incidence of leukosis disease.

The test records will be carried on until the hens reach five hundred days of age in September 1959. All eggs produced were used for food or sold to a local egg grading station.

The two lots of pure breeds were maintained as a source of pure chicks for breeding purposes.

### Broilers and Capons

Six hundred broiler type chicks were purchased. At three weeks of age the cockerels were caponized and the pullets grown as broilers on a conventional feeding programme.

The caponized cockerels were grown on a conventional broiler feeding programme to ten weeks of age. At this time, they were divided into two lots of one hundred and two hundred birds. The lot containing one hundred birds was kept in confinement and fed a commercial finishing ration for the production of roasting chickens. The lot containing two hundred birds was put on range with the above mentioned ration supplemented by whole oats until four weeks before marketing. At this time whole wheat replaced part of the grain portion of the ration.

Capons were marketed at sixteen weeks of age at an average live weight of seven lbs. The capons that were reared on range and received the grain as a supplement to the finishing ration were slightly heavier than those in confinement and receiving only a finishing ration. The birds receiving the grain did not have as much fat as the others but carried sufficient for a Grade A finish.

Caponizing, although a costly and risky operation, was worthwhile as a premium of four cents per lb. live weight was received over the price for roasters.

Other broilers and roasters raised throughout the period were used for meat in the school kitchen.

### Turkeys

A total of six hundred turkeys were raised during the past year. For the most part these birds were processed by students and used in the dining hall.

Some three hundred of these poults were started in June using various drugs as a means of controlling blackhead disease.

Some growth response was noted from each of the drugs used and all appeared effective in the control of blackhead. It was not definitely known however, whether the blackhead organism was actually present during the test although one outbreak was noted in the control pen.

Approximately sixty breeding turkeys were maintained for breeding work.

## Activities

Students received instruction in all phases of poultry management and marketing.

A total of 3.75 tons of poultry meat was processed by the students for use in the dining hall. This comprised the killing, evisceration and packaging of roasters, fowl and turkeys.

Slightly over 10,400 breeding turkeys were selected, banded and blood samples taken in cooperation with the O.A.C. Poultry Department pullorum testing programme.

Flock account books were supervised on several forms in connection with the cost of egg production survey being carried out by Mr. E. C. Hunt of the O.A.C.

The following meetings were attended — Poultry Day, Kemptville Agricultural School; Poultry Industry Parade of Progress, London; Western Fair, London; Poultry Industry School, O.A.C., Guelph; and Ontario Turkey Association Convention, Hamilton.

## HORTICULTURAL DEPARTMENT

### General

The horticultural department's work includes not only all the various divisions of horticulture such as landscape gardening, vegetable growing, greenhouse management and orcharding but also identification and control of all manner of crop disease and insects. Experimental work with herbicides demands considerable time and labour.

There has been an increased demand from the general public for aid in planning home grounds. Advice as to the better varieties of vegetables to grow both for commercial and home gardens is much sought after in spring. Inquiries as to sweet corn varieties are most frequent. The public are increasingly aware of the value of fertilizers for both flower and vegetable gardens. Nitrogen and potash are the most likely deficient plant foods in this district.

The spring of 1958 was a most suitable one for the setting of fruit blossoms and consequently apples, sweet and sour cherries produced abundantly. Pears and plum yields were below normal.

Apple scab was well controlled wherever the earlier sprays were applied and only one or two unscheduled sprays for any of our tree fruits was necessary. Small fruits also were profitably produced with average to large yields of raspberries and strawberries.

The outstanding insect trouble brought to this department was an outbreak of army worms in one hundred acres of corn. Parasites controlled this outbreak completely. Cabbage and onion maggots were exceptionally abundant; the latter did not respond to normal treatments. Mites were troublesome on apple and plum trees and aphids on sweet cherries, corn tassels and sugar beets. Blister mite on soft maples has become increasingly prevalent during the past two years.

Spraying cucumbers with vary high pressure spraying caused considerable "scorching" of leaves and a set-back to the plants. There was some evidence of a similar effect on young field tomato plants.

More requests than usual for assistance from tobacco growers were received. Seedling troubles were the most common source of complaints. Ninety-nine percent of these were from overfertilization. Only one case of the dreaded blue mould was recorded.

For the second year in succession late blight obtained a hold in our fall greenhouse crop of tomatoes. This had never happened in the preceding twenty-eight years. It would seem that growers of such crop should as a matter of insurance apply at least one protective spray about September 1st.

This department again assisted in irrigation experiments on field tomatoes by planting, cultivating, spraying and harvesting them.

Several farm organizations interested in horticulture picnic-lunched and inspected both grounds and buildings. We have more and more of such gatherings.

The staff travelled to such places as Sarnia, Tilbury, Brigden, Watford, etc. to give illustrated lectures or judge flower and vegetable exhibits.

There is a definite need for a full time Extension Specialist working under this department so that more time may be given to experimental work here at the Western Ontario Agricultural School.

### Herbicides

Screening tests were conducted with some of the newer herbicides and replicated tests with some that had already shown promise. A brief summary of the trials and results follow in this report.

**FIELD CROPS** — Two experiments were carried out on field corn on Brookston clay loam. The first consisted of twenty-nine treatments replicated four times in a randomized block. Both pre-emergence and post-emergence herbicides were compared with cultivation. Records were analysed for weed counts, plant heights and yields in bushels per acre. Best results were given by 4 lbs. of Simazine, 6 ozs. of Fisons CP1815 (applied as a post-emergence) and normal cultivations. In the second trial Simazine and two of its derivatives were applied to corn three to four inches tall a few days after rotary hoeing. The corn suffered no injury and weed control was satisfactory with only 2 lbs. of Simazine or 2 lbs. of G30031.

Three trials were conducted on soybeans. In the first, eight pre-emergence treatments were included in a randomized block of four replications. Records from weed counts, plant stands, and yields revealed that Neburon at 4 lbs. active per acre gave comparable results to three cultivations. The second trial was of a similar design in which CNBP was applied at four rates to three early post-emergence stages in the growth of the beans. Good weed control was given by 1½ to 2½ qts. of DNBP applied between the crook and cotyledon stages. However, it appeared that a lay-by cultivation was necessary. The third trial was a repetition of the latter experiment on plots of ¼ acre and much the same information was obtained.

**VEGETABLE CROPS** — In a replicated test, in which herbicides were sprayed on and around canning tomatoes, all were injurious to this crop. Visual injury appeared to be slight, however, the yield of fruit was reduced by 40-60%. Work on weed control in table beets was continued with a great number of chemicals. Eptam and Monsanto CP6936 gave promising results, but Radox and CDAA-T considerably reduced the stand of beets. In a small test on pimentos most plants were destroyed by the herbicides used. From eleven herbicides in a replicated test on onions only two gave good results. The first was Liquid Cyanamid applied as post-emergence herbicide on weeds one inch tall. This was repeated as each successive weed population appeared. The second was CIPC applied pre-emergence to the weeds at 8 lbs. active per acre. Niagara 4562 was used in two trials on carrots in comparison with herbicidal oil. Results were promising for the new herbicide as no injury occurred



to carrots even at the highest rate tried (5 lbs.). Broadleaf weeds were controlled by 2 lbs. and grasses by 4 lbs. active material per acre.

**FRUIT CROPS** — Two trials were conducted on raspberries. The first was begun in the fall of 1957 for chickweed control. Of the four materials used Amino Triazole at 1 lb. active per acre was outstanding and gave complete eradication of this weed during the fall and early spring. In the second trial several herbicides were used for the clean up of weeds between the canes during spring. The longest lasting effects were given by Amino Triazole, but for a quick kill and short time clean up Liquid Cyanamid gave very promising results. In the orchard Amino Triazole gave a very satisfactory control of weeds including couch grass around fruit trees when used at the rate of 1 lb. active in 25 gals. of water sprayed on the weeds until run off.

**LAWNS** — Neburon and Silvex (245TP) at different rates and applied at monthly intervals from April to September were compared for chickweed control in heavily infested lawns. During the spring months 24 ozs. of acid 245TP gave complete eradication, however, in later treatments 32 ozs. were required to give similar results. At all times 12 ozs. of acid were sufficient to eradicate white clover. In a series of plots for general weed control in lawns MCPB at 32 ozs. gave satisfactory control of plantain and dandelion.

**HARD TO KILL WEEDS** — No satisfactory herbicide was found to control toadflax. From sixteen treatments on horse nettle applied in 1957 only Amino Triazole gave outstanding reductions in the 1958 regrowth. Large areas were treated in 1958 with different rates of Amino Triazole for counts of regrowth in 1959. The 1957 plots on Canada thistle and milkweed showed marked reductions in regrowth during 1958 where Amino Triazole has been applied. About four acres of bush mainly hawthorn were treated with varying amounts of Fenuron in 1958 and the effects will be evaluated during the coming season. Seven herbicides each applied at three rates and each plot subdivided and one-half fertilized were initiated for hawkweed control. Amino Triazole and Dalapon were compared for couch grass control and both gave good results.

**EXTENSION** — Several cases of 2-4D injury to tomatoes, and other crops were investigated during the season, these mainly in Kent County. An increasing number of farmers made inquiries about herbicides and their uses in crops and on hard to kill weeds.

## ENGLISH DIVISION

### Instruction and School Activities

Regular instruction was given both Senior and Junior Years in English, Public Speaking and Civics. Particular emphasis has been placed on Public Speaking and a large proportion of time has been devoted to it. It was also co-ordinated with the work of the Literary Society which sponsored and provided prizes for speaking contests. Through the co-operation of district radio and television stations, the school was able to provide at least half of the senior students an opportunity to take part in broadcast interviews.

Courses in civics are becoming increasingly comprehensive. As is a yearly practice, the instructor and the senior class toured the Parliament Buildings in Toronto and attended a sitting of the Legislative Assembly.

Supervision was provided for student activities, which included speaking competitions, skits, and preparation of the school year book, "Souvenir".

Preparation of the school calendar falls within the scope of this division, as does the writing of articles and advertisements which describe the activities and courses of the school and which are published in newspapers and periodicals. Responsibility is also assumed for the programmes and arrangements for many school events, including Graduation, Baccalaureate Service, Parents' Night and Presentation Night.

Supervision of all aspects of library administration, including cataloguing and circulation of books, is a continuous task during the year.

### Public Relations and Extension

The instructor accepted frequent invitations to speak before groups and clubs on subjects relating to the school and to civics and citizenship. Among groups so addressed were Women's Institutes at branch, district and area levels, Junior Farmers, Farm Forum, Rotary, and rural church and women's organizations.

Also undertaken were numerous assignments to act as judge or coach for Junior Farmer and school contests in public speaking, debate, dramatics and television programs.

Considerable time was spent during the summer months participating in the school public relations activities, particularly in connection with visiting the homes of prospective students prior to their enrolment at W.O.A.S.

### AGRICULTURAL ENGINEERING

Extension Specialists of the Agricultural Engineering Services of the Extension Branch are responsible for all the work in this division. The obligations involved are three-fold:

1. Engineering Extension Service in the Counties of Essex, Kent, Elgin, and Lambton.

2. Instruction in Agricultural Engineering to the students in the School.

3. An applied research programme as it pertains to this division, with the Experimental Farm being used as a testing ground. e.g. New designs in farm buildings, the effect of undue irrigation on such crops as burley tobacco, tomatoes, early potatoes, etc., trials of newly designed farm machinery e.g. hay crushers, rakes, etc.

Such an arrangement is rather unique and is working to the mutual satisfaction of everyone concerned and with an efficient use of personnel.

### REGIONAL VETERINARY DIAGNOSTIC LABORATORY

The laboratory established at the Western Ontario Experimental Farm in August 1952, by the Ontario Veterinary College, is able to give a complete diagnostic and consultation service to the Veterinarians and farmers of Southwestern Ontario. Lectures are given to both Junior and Senior classes attending the Western Ontario Agricultural School.

## Instruction

Many educational films are shown to the students to supplement lectures. A collection of 35 mm projection slides, taken by the laboratory personnel, of interesting disease cases submitted to the laboratory, has been started for future teaching purposes.

## RESEARCH PROJECTS

### Autogenous Staphylococcus (Mastitis) Bacterin Test in Dairy Cattle

In view of the increased number of mastitis cases due to staphylococcus organisms, and the increased difficulty in treating such quarters with medications, it was decided to make some investigation into the value of autogenous bacterins in a commercial herd.

For this test three herds of cattle were used. These were, the dairy herd at the Western Ontario Agricultural School, and two commercial herds in the surrounding district. The total number of cows involved was ninety. In each herd only half the number of cows were vaccinated, the remainder kept as controls. The animal husbandry, milk procedures and feed varied at each farm, but in general the dairy management was above average in each instance.

These herds were tested at approximately 10 day intervals for two months. Results were studied, and, at the end of this period, two - four significant strains of staphylococcus organisms were selected in each herd. One or two strains were selected for their apparent chronicity, and one or two strains were selected as being in the acute stage at the time of selection. Cultures of these organisms were sent to Dr. D. A. Barnum, Department of Bacteriology, Ontario Veterinary College, who made bacterins of them.

As stated above, in each herd only half the cattle were vaccinated, the remainder kept as controls. The vaccination was repeated in ten days. Since the beginning of this test, samples have been taken at regular 10 day intervals. The culturing of these samples and the reading of the stained slides has been made the duty of one person on the laboratory staff, in an effort to eliminate as much as possible any variation of interpretation.

The first vaccinations were made in November 1958. The accumulation of data is still being made, and a summary will not be attempted until the test has been in operation one year. Notes will be made on the length of time of the apparent effect of the bacterin: the influence of the vaccine on medications used on clinical quarters: the effect of the vaccine before and after a "dry" period: and other factors.

The above is only a very brief outline of this plan. A great many details have been left out to make the account as short as possible.

Plans are being made in collaboration with the Swine Husbandry Division, Western Ontario Agricultural School, to study haemoglobin levels in small nursing pigs being given iron, orally, intramuscularly and by the use of sods.

### Services: Extension Activities

The laboratory is concerned with the diagnosis of disease conditions in animals submitted by the Veterinarian; the farmer and others. Post mortem specimens are also submitted to the laboratory for bacterial examination. The Regional Veterinary



Officer has made numerous trips to the farms in the area for consultation services. The following is a detailed report of the activities of this laboratory:—

#### Post Mortem Examinations

One thousand four hundred and seventy-two (1,472) animals and poultry were submitted to the laboratory for post mortem examination.

#### Mastitis Diagnostic Service

The total number of milk samples tested at this laboratory in the fiscal year 1958-1959 numbered 34,637. This is an increase of 11,627 samples over last year. Of this number 20,602 samples were submitted by Veterinarians; the Kent County Health Unit; and Commercial Dairies; 2,061 samples were submitted by the farmers; and the remaining 11,974 samples were collected by the personnel of the laboratory.

To date this laboratory is receiving milk samples from five counties:— Kent, Essex, Lambton, Elgin and Middlesex.

A long term mastitis testing program is in operation in conjunction with the Kent County Public Health Veterinarian. Since 1955 the percent of cows affected has been reduced from 55.5% to 7%, and the percent of Grade A milk has increased from 82.3% to 95.5%.

## *Demonstration Farm — New Liskeard*

The New Liskeard Demonstration Farm is located in what is known as the Little Clay Belt of Northern Ontario. It is situated north of the town of New Liskeard within the town limits.

The Farm being located on the southern fringe of the Temiskaming Clay Belt gives all visitors to the area an indication of the potentials and possibilities of Agriculture in this particular section of Northern Ontario. The soil is representative of the soil not only in the Little Clay Belt itself but also soils in other sections of Northern Ontario.

The Farm consists of 320 acres of heavy clay soil of which 304 are tillable. Of the remainder some five acres are used for farm buildings and lawns while approximately 11 acres is rough untillable pasture land.

Highway No. 11 divides the farm exactly in half, the equal portions to the East and West of this highway. The topography of the Farm is flat and while the productivity and potential of the land is excellent, drainage is the chief problem, particularly on the 160 acre tract east of No. 11 highway.

The Western boundary and topography is somewhat more rolling as one nears the Wabi River with the rough tract of some 11 acres along this particular river being used for pasture. A small plantation of some one and one-half acres of jackpine is planted in this rough tract.

The Farm itself strives to give leadership in Animal and Field Husbandry particularly. All projects are kept on the most practical basis possible and Cost of Production Records are now being kept on the various enterprises.

In June, 1958, an experimental orchard of 135 fruit trees was established. These trees include varieties of apples, plums and cherries which are being tested particularly to determine their possibilities and adaptability to Northern Ontario conditions.

The experimental data on varieties of cereal grains and forage crops are obtained through Demonstration plots on the farm in co-operation with the Field Husbandry and Soils Department of the O.A.C. Of the sixteen fields on the Farm, four are seeded to permanent type pasture for the beef herd and sheep flock. On the remaining fields a four to five year rotation is practiced depending on the particular field and its capabilities. That is, one to two years grain, two years of hay, and one year pasture. In such a rotation all fields seeded down are seeded to the recommended No. 1 hay and pasture mixture. Soil samples are obtained each Fall and fertilizer applied in accordance with the recommendations of the Soils Department of the O.A.C. Pasture fields receive a fall application of 150 pounds per acre of 0-20-20 followed the following spring with an application of ammonium nitrate at one hundred pounds per acre. Hay meadows received one-hundred pound application of 10-10-10 fertilizer or were top dressed with barnyard manure. Grain fields receive either an application of 100 lbs. of 11-40-30 or a 150-200 pound application of 4-24-12 at the time of seeding. These fields also receive an application of barnyard manure the previous Fall prior to plowing or in some cases prior to

spring cultivation. Through this practice it is hoped that the fertility of organic matter of all farm soils can be held at a satisfactory level.

Registered seed is grown annually and distributed to farmers in the area through the Temiskaming Co-operative. Registered Garry and Shield oats were the two varieties grown in 1958. Yields were excellent and while harvesting was difficult at times due to weather, the major portion of the registered seed grown graded No. 1 while approximately 30% graded No. 2 on colour only.

Harvesting of experimental plots was delayed considerably due to immaturity as these particular plots were seeded very late due to adverse spring seeding conditions. The Spring of 1958 was very cold and backward with little growth in so far as hay and pasture fields were concerned until approximately June 10th. Heavy rains at two and three day intervals made for a prolonged seeding period with much re-working of lands necessary prior to seeding. The first spring grain was sown on May 9th with seeding finally being completed on June 18th. However, in spite of this backward seeding period we were favoured with a good growing season throughout the summer, the result being excellent yields, varying from 135 bushels per acre of Garry oats to a low of 63 bushels per acre of Shield oats giving us an average yield of 80 bushels to the acre on the 95 acres sown to spring grain. Weight per bushel of Garry oats uncleaned averaged 40.5 pounds per bushel and the average weight per bushel of Shield oats was 37 pounds to the bushel. Hay yields were excellent, new seedings yielded as high as three tons per acre with an overall average yield being obtained of 2½ tons per acre. Some 260 tons of hay were stored in the barns. Approximately 85% of the hay harvested was stored in excellent condition even though the haying season due to weather conditions was extended, over a period from July 15th to August 16th. The purchase of a hay conditioner is believed to be largely responsible for the saving of such a high percentage of top quality hay.

Pastures during the grazing season produced an abundance of high quality pasture and at no time was there a shortage of pasture for the beef herd and sheep flock. Fall plowing commenced on October 10th at which time some eighty acres were plowed. This operation was completed the first week in November.

Breeding stock from the purebred Yorkshire herd and Suffolk sheep flock was sold according to demand to farmers in the areas of North Bay, Sturgeon Falls, New Liskeard, Earleton and Englehart.

### Junior Extension

Existing facilities at the Farm permit close co-operation with the local Agricultural Representatives in providing judging classes and other facilities for the various 4H and Junior Farmer Clubs. Four Scottish young farmers visited the Farm last summer and as such, had the opportunity of seeing the livestock and cropping programme being carried out at that particular time.

The Annual Junior Farmer and 4H Club Annual Livestock and Seed Judging Competition was also held at the Farm this past year, farm livestock and poultry being used to provide the necessary judging classes.

Two groups of students from the Ville Marie Agricultural School visited the Farm as did groups of Public School pupils from four of the different District schools.

In October, the North-Eastern Ontario 4H Competitions were conducted at the Farm with the livestock, poultry and seed judging classes being provided.



## Senior Extension

Several Senior Agricultural Organizations visited the Farm to see the various experimental plots of cereal grains, forage plots and hay and pasture mixtures that are incorporated in the programme. In addition many local farmers visited the Farm during the haying operations to see the hay conditioner at work and the results derived from this operation. This being the first machine of this type to be used in Northern Ontario, many of the visitors dropped in during the winter to see at first hand the quality of hay stored. The number of individual farmers and small groups visiting the Farm has increased remarkably this past Fall and Winter to see and discuss the various farm operations.

## Hay Making

The 1958 hay making season was fairly lengthy due to intermittent heavy showers during this period of time. The actual hay making operation did not start until July 15th due to the slow growth of meadows up until June 10th, this being caused by the cold backward Spring of 1958. However, the haying operations were completed on August 16th as frequent heavy rains caused many delays. The purchase of a hay conditioner, however, did speed up operations and proved quite worthwhile with some 85% of the 13,940 bales stored being of excellent quality. Yields varied from a high of 3 tons per acre on first year meadows to a low of 1½ tons per acre on one of the older meadows, average yield being 2½ tons per acre. This amount of hay filled the existing main and pole barns to capacity. All meadows received an application of 10-10-10 fertilizer at the rate of 100 pounds per acre last Spring while two of the permanent pastures this past Fall received a 150 pound application of 0-20-20 which will be followed this Spring with 100 pound application of ammonia nitrate.

Performance of the hay conditioner was recorded under different conditions and hay mixtures, thus, from the times recorded, the speed up in drying time this year varied from six to eight hours, that is, the conditioned hay was ready for baling and storage six to eight hours sooner than was the non-conditioned hay. Weight of bale from the baler was recorded.

Average Weight of 50 conditioned bales .....	46	pounds
Average Weight of 50 unconditioned bales .....	63¼	"
Average difference in weight, conditioned vs. unconditioned .....	17¼	" per bale

Following is an example of the two last swaths of hay in field No. 4.

*Hay Mixture* — Alfalfa-red clover-timothy and brome grass.

*Hay Cut* — August 4th A.M.

*Completed Cutting* — 11:30 A.M.

*Completed Conditioning* — 12:45 P.M.

*Weather A.M. August 5th very dull and humid.*

*Hay Raked* — 4:30 P.M. August 5th and baling commenced.

<i>Weight of Bales from the baler:</i>	<i>Conditioned</i>	<i>Unconditioned</i>
Bale No. 1 .....	40.5 pounds	56.25 pounds
Bale No. 2 .....	46 "	62.75 "
Bale No. 3 .....	48 "	64 "
Bale No. 4 .....	48 "	73 "

The above bales were stored separately and exhibited at seed fairs in the New Liskeard and North Bay areas where farmers could evaluate the end result of this particular operation. Additional bales were stored separately on the Farm and

similar data was recorded on them, and kept for the benefit of groups or individuals who visited the Farm during the winter months to obtain additional information on this particular machine.

The slatted floor hay drier was also put in operation in the early part of haying. However, due to the amount of labour and time required for removing of bales and a large hay crop to harvest, limited use was made of this method of drying hay.

### Pasture Management

Pasture conditions throughout the grazing period were excellent thus providing an abundance of pasture for the present beef herd and sheep flock.

With the establishment of the beef herd and in order to determine the maximum carrying capacity of animals per acre in this area, it is our intention to further improve the existing pastures and to seed down more acres to permanent pasture mixture. This past year some 42 acres were seeded down, 30 acres being seeded to the following hay and pasture mixture:

Vernal Alfalfa .....	6 pounds
LaSalle Red Clover .....	2 "
Ladino Clover .....	2 "
Climax Timothy .....	4 "
Brome .....	7 "

The remaining 12 acres was seeded to the following permanent pasture mixture:

Alfalfa Vernal .....	6 pounds
LaSalle Red Clover .....	2 "
White Dutch Clover .....	1 "
Ladino .....	1 "
Timothy .....	4 "
Brome Grass .....	6 "
Meadow Fescue .....	2 "

Maximum utilization of our pastures is maintained by rotational grazing, harrowing of droppings and clipping, plus the fertilization programme of applying 150 pounds of 0-20-20 in the Fall of the year followed by a Spring application of 100 pounds of ammonium nitrate on fields seeded down to hay-pasture or permanent pasture mixtures. A nurse crop of 1 bushel of Garry Oats is sown, it being our intention to pasture the nurse crop off when about 8 inches in height. However, due to a plentiful supply of other pasture this season the nurse crop was harvested as a grain crop. Both fields last Fall indicated an excellent set of new pasture seedlings and a good stand is anticipated for 1959.

### Zero Grazing

Zero grazing was practiced for a period of four weeks last autumn rather than let the beef herd trample the after grass on the first year meadows. This practice proved beneficial during this period of wet weather and at the same time supplemented the older pasture where the herd was held. Time required for cutting and unloading the forage in old pasture was 20 minutes per day. The power takeoff manure spreader was used as a silage wagon.

### Silage

No silage was made this past year. However, our plans for 1959 include the making of silage, using oats as the ensiled material. Three two acre plots of early

maturing Hybrid corn varieties were grown but again proved unsatisfactory due to early frosts. Therefore, it can be assumed on the basis of this year's trials and those conducted in the past that the growing of corn for silage is not practical for this particular region.

### Weed Control

Weeds are controlled by periodic clipping during the growing season. Weed control in all cereal crops was most satisfactory as a result of weed spraying with 2,4-D. Roadsides, lanes and lawns were also sprayed with satisfactory results. Unsprayed areas of approximately one acre in size were left in two of the three fields to demonstrate the value of weed spraying in cereal grains.

### Drainage

Drainage on the 160 acre block east of Highway 11 continues to make crop production difficult. During wet seasons surface drainage is employed and proved moderately satisfactory but in comparison to the 17 acre tile-drained field west of the Highway, it would indicate that tile drainage would be satisfactory and allow spring seeding to be completed approximately two weeks earlier than at present. The 17 acre tile-drained field continues to work well after a period of six years. Experimental plots of forage and cereal grains are grown on this particular field. Evidence of the usefulness of tile drainage on this field is the ability of alfalfa to grow and remain in the mixture for long periods of time.

### Experimental Plots

As in the previous three years the Field Husbandry Department, O.A.C., established experimental plots of forage and cereal grains. Eight one acre plots of alfalfa were sown in the Spring of 1958 to determine which of the following eight varieties, DuPuits, Alfalfa, Canadian Grimm, Ranger, Rhizoma, Narragansett, Vernal, Viking, might prove the most satisfactory for Northern Ontario soils. Each plot was sown at the rate of 16 pounds per acre, that is, 10 pounds of alfalfa plus 6 pounds of climax timothy.

### Regional Oats and Barley — New Liskeard Tests

The regional test plots established on the Farm this past year included the testing of the various oat varieties plus barley and oat mixtures. Yields were generally lower from the plots than those received in the average yield on the Farm, this being due to the late seeding which was unavoidable on the land allotted to these particular plots. The following results are taken from the preliminary publication of regional tests for the New Liskeard district.

<i>Variety</i>	<i>Yield</i>
Garry .....	2764
Rodney .....	2438
Shield .....	1996
Clintland .....	2360

### COMPARISON OF OATS AND BARLEY GROWN IN PURE STANDS AND IN MIXTURES WITH EACH OTHER — 1958

<i>Variety or Mixture</i>	<i>Yield</i>	<i>Percent</i>	
	<i>lbs./acre</i>	<i>Oats</i>	<i>Barley</i>
Garry	2930		
Brant	2179		



*COMPARISON OF OATS AND BARLEY GROWN IN PURE STANDS AND IN MIXTURES WITH EACH OTHER—1958*

<i>Variety or Mixture</i>	<i>Yield lbs./acre</i>	<i>Percent</i>	
		<i>Oats</i>	<i>Barley</i>
Mean (1-1)	2555	57.3	42.7
(3-1)	2742	80.1	19.9
Garry	2930		
York	2294		
Mean (1-1)	2612	56.1	43.9
(3-1)	2771	79.3	20.7
Garry & York (1-1)	2537	38.2	61.8
Garry & York (3-1)	2342	72.2	27.8
Garry	2930		
Herta	2082		
Mean (1-1)	2506	58.5	41.5
(3-1)	2718	80.8	19.2
Garry & Herta	2298	51.2	48.8
Garry & Herta	2608	80.0	20.0
Shield	2692		
York	2294		
Mean (1-1)	2493	54.0	46.0
(3-1)	2592	77.9	22.1
Shield & York (1-1)	2409	34.2	65.8
Shield & York (3-1)	2740	66.0	34.0

### Livestock

Registered livestock on the farm consists of Herefords, Yorkshire hogs, Suffolk ewes and one team of horses. In addition there are a number of grade Hereford cattle and cross-bred Suffolk-Hampshire ewes. Breeding stock is sold to farmers in the different areas of Northern Ontario when the demand exists. The greater number of the market animals are sold through the Temiskaming Sales Barn and the Temiskaming Co-operative. No beef cattle breeding stock has been sold to date due to the recent establishing of the herd and the desire to build the present beef herd up to the carrying capacity of the Farm. Surplus stock, when available, providing it is of the desired quality, will be sold to farmers in Northern Ontario. The present herd is maintained and being built up for the purpose of focusing greater attention to the raising of beef cattle in Northern Ontario and where practical to provide an additional enterprise for farmers of this area.

### Herefords

At present the Hereford herd consists of 22 registered cows, 21 grade cows, 24 heifers, 15 calves and one bull. An additional bull, Mixer 12L, is on loan to the Farm from the Ontario Agricultural College, Guelph. Both herd sires are performance tested sires and data on their progeny is being recorded. Birth weight, weaning weight, one year old and two year old weights are being recorded on all progeny from the herd sires. This information combined with the individual animal's type will serve as a basis for selection for herd replacements and for sales of surplus breeding heifers to farmers in Northern Ontario. The main purpose of maintaining the present beef herd is to focus attention on feeding, housing, and

growth studies in so far as beef cattle are concerned in Northern Ontario. A further purpose for the maintenance of the herd is to supply as many steer calves as are available each year for experimental feeding and digestability trials at the Ontario Agricultural College.

This winter sufficient animals were housed in the main barn to provide sufficient warmth to prevent freezing of overhead water pipes. However, with the proposed renovation of buildings, all mature cows and heifers one year and older will be housed in the loose beef type barn.

Approximately fifty cows and heifers were kept outside this winter and fed hay, mineral and water and have come through the winter in a most thrifty condition with no medication or treatment administered other than for the control of lice.

### **Baby Beef**

Three steer calves were fed on the Farm during the summer of 1958 and finished as baby beef. These were weaned and placed on feed on May 9th, 1958, and feed costs recorded. The average daily gain on these three steers averaged 3.1 pounds per day for the feeding period of 166 days. The steers were placed on exhibit at the New Liskeard Fall Fair. Information presented at the exhibit was, rate of gain per day, feed costs and amount of feed consumed. This, coupled with a brief history of their ancestry and ages, made for an interesting exhibit and was of much interest to all people attending the Fall Fair especially the farm people. As a result of the interest displayed, the three steers were slaughtered and sold to the local co-operative thus enabling a considerable number of farmers to visit the co-operative and see for themselves the dressed carcasses. This method of marketing was decided on after numerous requests from local people who visited the Farm from Fair date until the three steers were slaughtered. On completion of the 166 day test period the steers showed a profit of \$60.50 each over production costs. This profit did not include a charge for labour.

### **Swine**

Nine sows and one boar are the nucleus of the swine herd, seven sows being of English Yorkshire breeding, the remaining two, of Canadian Yorkshire breeding. Five of the English sows were born and raised on the Farm, while the two Canadian sows were purchased from Ontario breeders. The Canadian Yorkshire boar is being used to cross breed on the English Yorkshire sows.

Starting April 1st, 1959, weaning weights of piglets are being kept as is the cost of production per litter. The above figures will be kept on litters being wet fed using buttermilk and a grain mixture of oats, barley and wheat. Similar costs will be kept on those litters being self fed. Breeding stock is sold to farmers in Northern Ontario with the market hogs being sold through the local Temiskaming Sales Barn.

### **Sheep**

The sheep flock consists of 28 ewes, 10 being registered Suffolk ewes, the remaining 18 ewes are Hampshire and Hampshire x Suffolk cross. The sheep flock is dipped annually and treated twice yearly for parasites. Wool sales are made through the Co-operative Wool Growers, Toronto. This Fall a North Country Cheviot ram was purchased and used on all the breeding ewes as a start on a cross-breeding experiment. Cross-breeding is of particular interest to the sheep raisers in the area and as such it is our intention to obtain as much information on cross-breeding as possible.

## Feeder Lamb Experiment

Twenty-six feeder lambs plus seven late unfinished lambs from the Farm were placed on feed December 8th. Twenty-six of these lambs were purchased from local sheep raisers at a cost of .15¢ per pound. Hay and grain costs were recorded for the feeding period and the following results were obtained:

## FEEDER LAMBS

	No. Lambs	Daily Gain	Average Gain Lbs.	Av. No. Days to Market Wt.	Buying Price	Selling Price	Gain Per Head
Lamb Group #1 (40-55 lbs.)	4	.39 lbs.	38.5 lbs.	108	28.43	68.98	\$10.12
Lamb Group #2 (56-70 lbs.)	14	.42 lbs.	44 lbs.	78.5	130.51	262.54	9.43
Lamb Group #3 (70-85 lbs.)	10	.43 lbs.	23.2 lbs.	54.8	116.40	206.25	8.98
Lamb Group #4 (85-95 lbs.)	5	.41 lbs.	18.6 lbs.	45.2	67.20	110.46	8.66
Purchase Price _____	\$ 342.54		Total Selling Price _____			\$ 648.23	
Cost of Grain Ration _____	96.65		Total Costs _____			469.19	
Cost of Hay Fed _____	30.00						
			Profit _____			\$ 178.04	
Total Cost _____	\$ 469.19						
			Profit Per Lamb _____			\$ 5.43	

NOTE: Lambs were sold when it was decided each was carrying the desired amount of fleshing rather than by individual weight.

The foregoing experiment was conducted to determine for the local sheep raisers whether or not it would be profitable for them to finish their unfinished lambs on their farms rather than ship them in the unfinished condition which has been their practice. According to area farmers this practice has proven unsatisfactory and has lowered their expected income from their sheep enterprise. Thus, the foregoing group was purchased and feeding costs recorded. All lambs when finished were sold locally to the Temiskaming Sales Barn and Temiskaming Co-operative. The above information is of limited value due to the small number of feeder lambs fed. However, the local Sheep Breeders Association has been most appreciative of the information received and have expressed the desire that this experiment be conducted again in 1959 involving a larger number of lambs if possible.

## Poultry

Our laying flock consists of 189 Leghorn pullets and 203 Columbia Rock pullets. This was the number placed in the laying pens in August, 1958. All eggs are sold locally through the Temiskaming Co-operative and again production costs are recorded. Disease has been very limited. Our losses this far have all been with our Leghorn flock, the cause of such losses being that of rectal prolapse which, according to information received, must be attributed to a weakness in this particular strain of Leghorn hen.



## *Strathclair Farm*

The Demonstration Farm is located at Sault Ste. Marie, in the Township of Tarentorus, in the District of Algoma. Strathclair Farm comprises approximately three hundred acres, and is operated by the Department of Agriculture in the interest of education and research. General farming operations are being carried on along with some experimental plot work on cereal grains, and the recording of all data possible on a beef herd of Herefords.

The topography of this farm is flat except for approximately forty acres of rolling pasture land. The accumulation of surface water on the flat land continues to present a drainage problem. However, with the use of existing open ditches and the addition of new ones, much of the surface water is being eliminated. Most of the soil on the farm is of a sandy loam nature with a very small area of clay loam around the buildings.

During the past year visiting farmers have made inquiries about the purchase of young bulls and foundation heifers for their herds. They showed a general interest in the crops and cropping practices which are being carried out, as well as the layout of the farm and buildings.

### Seeding

A very early Spring allowed seeding operations to be completed by the 14th of May. Two fields comprised of thirty-three acres were sown to Garry Oats. One field of thirteen acres was undersown with a mixture of Red Clover, Alsike Clover, and Climax Timothy. The remaining twenty acres were not seeded down. Both fields received an application of chemical fertilizer 4-24-12 at the rate of 200 pounds per acre. In the Fall, the twenty-acre field received an application of barnyard manure which was plowed under.

### Silage

Grass silage has proven to be a very valuable feed and is considered one of the major crops at Strathclair Farm. A mixture of Reed Canary Grass and Red Clover was ensiled in two silos, one a tower silo and the other a horizontal silo. In the tower silo considerable freezing was experienced especially on the north side. The horizontal silo was self-fed and freezing was in evidence along the top and sides. The cattle had to be restricted from having access to the silage continually, otherwise they would not choose to eat any hay. The silage from both the tower and horizontal silos was of excellent quality and proved very palatable.

### Haying

During the early part of June, it appeared as though the hay crop would not be very heavy. However, by mid June growth had advanced beyond all expectations. Fields which had been in hay for three and four years yielded 13½ tons per acre. One thirty acre field which was summer fallowed the previous year, went as high as three tons per acre. Approximately 200 tons of hay was field baled and went into the barns in good condition. Over the past two years a surplus of hay was

built up, and an attempt has been made to dispose of this surplus. Approximately 75 tons of the best quality hay will be held as a reserve for the following winter.

### Harvesting

Harvesting operations commenced the last week of August, and threshing was completed by the middle of September. The Grain was cut with a binder and allowed to remain in the stook for a week to ten days. Rain showers caused some discolouration of the grain; nevertheless the yield was excellent, reaching one hundred bushels per acre.

### Experimental Plots

Drill widths of four varieties of Barley and four varieties of Oats were sown and their yields taken. The determinations of the yields were conducted at the Ontario Agricultural College and are as follows:

	<i>Variety</i>	<i>Length of Straw</i>	<i>Yield</i>
BARLEY	York .....	40"	62.8
	Brant .....	34"	58.2
	Parkland .....	44"	50.3
	Montcalm .....	38"	42.1
OATS	Shield .....	40"	89.4
	Fundy .....	41"	77.7
	Garry .....	43"	76.2
	Rodney .....	44"	68.9

This test proved interesting and received favourable comments from visitors to the Farm.

### PASTURE MANAGEMENT

All pasture fields in early Spring were given an application of 30% Ammonium Nitrate and 4-24-12 fertilizer. This was very effective in stimulating and maintaining growth throughout the grazing season. Twenty-five head were rotated on three, ten-acre pasture fields to prevent over-grazing. A forty-acre pasture field supplied feed for twenty-three cows with calves until early September.

### Weed Spraying

All pasture fields were sprayed with 2,4-D and MCP 80, which proved very effective in the control of weeds. Two other chemicals which were used along ditch bottoms and fence rows were Amino Triazole and Dowpon.

Weed spraying and fertilization proved to be a very effective method in maintaining pasture growth.

### Stables

All stabling areas were sprayed during the summer with Carbola, a disinfecting whitewash. The results were very effective and throughout the winter the stables were free of cobwebs and presented brighter and cleaner stables.

### Drainage

Drainage has been and continues to remain a major problem in the operation of the Farm, as the land is low and flat. During heavy rains, water continues to

remain on the fields for some time. There are two main ditches on the Farm which carry off a large portion of the water. There are four lateral ditches which have helped a great deal to remove some of the surface water, and one lateral ditch was dug last Fall which proved very effective in the removal of surface water.

### Grounds and Yards

During early Spring the ground around the two houses on the Farm was levelled and a lawn established. Fine slag was spread on the driveway leading to the two houses. A building which was once used to store wood was relocated, repaired and is now used as a garage.

Sorting pens and a chute were constructed in the barn-yard which have been very useful in Spring and Fall for sorting cattle.

### LIVESTOCK

There are two cow herds of Herefords; one herd is composed of twenty-three cows which were originally purchased from Ontario breeders, the other herd of twenty-one cows was purchased from a Saskatchewan breeder.

The cattle were put on pasture on May 24th, and pasture bred. There are two bulls, one is horned and was placed with the Western cows. The other is polled and was placed with the Eastern cows. Twenty-three per cent of the calves sired by the polled bull did not have horns.

The birth weights and weaning weights of the calves were recorded. During the month of September all bull calves were castrated and all heifer calves were vaccinated. This past winter all the calves were wintered at Strathclair Farm, and monthly weighings were recorded. They were fed a ration of home grown oats and 32% concentrate mixed at the ratio of 3:1 and fed at the rate of  $1\frac{1}{2}$  pounds per one hundred pounds of weight.

Trolene was administered by the Veterinarian to eight yearling heifers and seventeen calves to ascertain the affect on the control of grubs.

Dosage: 1 bolus per 300 pound live weight.

Trolene was administered in early November, 1958, and results recorded in April, 1959.

Forty two Spring calves were used for the tests, seventeen received Trolene and the remaining twenty-four were not treated. The calves not receiving treatment showed eighteen grubs per head against the treated calves which showed 0.8 grubs per head and had a difference in gain of eleven pounds per calf.

During the early winter, eighteen yearling heifers were dehorned with no ill effects. From time to time throughout the winter all cattle were sprayed with Methoxychlor to control lice. Twenty cows were loose housed in the number two barn, the doors of which were allowed to remain open all winter. These cattle were given fresh hay every day. They had free access to the horizontal silo and walked one quarter of a mile for water. They always appeared in much better condition than the cows stabled and tied in stanchions.

All cattle were fed hay and silage during the winter months with crushed oats being fed the first of March. All cattle had free access to cobalt iodized salt and mineral.



**Steer Calves O.A.C.**

During January 1958, twenty steer calves from Strathclair Farm were placed on feeding trials at the Ontario Agricultural College, Guelph. These calves varied in weight from 485 pounds to 740 pounds. They were on test for 98 days, except four which were on test for 172 days. During the test period their average daily gain on test was 2.28 pounds and their average dressing percentage when slaughtered was 55.5%.

All steers produced Grade A carcasses with the exception of two B's.

Four steers were sold dressed to the Dining Hall at the College, and the remainder were sold live weight to packers.

BRANCHES OF THE  
ONTARIO DEPARTMENT  
OF AGRICULTURE





## *Agricultural and Horticultural Societies Branch*

The administration of the Agricultural Societies Act, the Horticultural Societies Act and the Community Centres Act is the responsibility of this Branch. The office of the Director is also the headquarters for the Ontario Plowmen's Association, the Ontario Horticultural Association and the Ontario Association of Agricultural Societies. Leadership is given in planning Fairs and Agricultural Society activities, also Horticultural projects and Plowing Matches, including the International Plowing Match. Readers may consult Annual Reports of the above organizations for further details.

### FAIRS

The sponsoring of Fairs by Agricultural Societies has been a common practice in this province since before 1830 the year in which the government introduced an act granting aid to these organizations and establishing the basis by which societies already organized, as well as those being formed, might qualify. It was the first attempt of the government to assist agriculture. By 1855 Ontario had 40 county societies and 150 township societies. Today there are 260 and all but twelve of these held Fairs in 1958. Among the total of 248 shows there are three large exhibitions, namely, the Canadian National Exhibition, Toronto; Western Fair, London; and Central Canada, Ottawa. These three are not identified as societies but as associations. Each has a constitution and by-laws and like ordinary societies draws grants under the Agricultural Societies Act.

Fairs are classified according to the prize money they pay out for Agriculture. There are 8 A Fairs, 38 B Fairs and 202 C Fairs.

Beamsville, Orangeville, Mitchell and Napanee were elevated during the year from C to B by the Canada Department of Agriculture as well as Ontario.

### Fairs With Highest Gate Receipts

A FAIRS		B FAIRS		C FAIRS	
1. Toronto (C.N.E.)	\$1,008,319.00	Can. Lakehead Ex.	\$59,132.05	New Liskeard	\$4,376.56
2. Ottawa (C.C.E.)	156,970.00	Belleville	23,148.00	Almonte	3,371.40
3. London (Western)	136,000.00	Leamington	10,047.69	Sutton	3,366.69
4. Lindsay	24,747.50	Renfrew	9,506.55	Perth	3,247.70
5. Peterborough	22,269.25	Barrie	7,516.85	Delta	2,612.30

Rockton again headed the list for one day fairs. Receipts were \$5,009.00. The majority of fairs charged 50¢ at the gate for adults. Rodney and Emo Fairs each charged \$1.00, the C.N.E. 75¢ and the Canadian Lakehead 60¢.

### Centennial Fairs

Upwards of 112 societies have been carrying on continuously for more than a century. Some 12 societies qualified during the year for Centennial grant of \$1,000.00 by constructing a new gateway to the grounds and installing plaques on the main pillars. The list included: Cookstown, Desboro, Orangeville, Dungannon, Durham, Kincardine, Paris, Parkhill, Peterborough, Russell, Stirling and Bobcaygeon.

Almonte celebrated their Centennial but postponed building a gateway and accepting the government grant.

### Women's Work

The home department of fairs continues to be one of the most important. Prize lists are being kept up-to-date and are in many instances issued early in the year thus encouraging increased exhibitors and entries. Women's Institutes continue to find a place in the programme. Over 100 societies had displays put on by Institutes and in some cases these displays filled one section of the main exhibits building. Women are also acting as officers; 65 societies have women secretaries and one society, namely Smithville, has a woman president.

### 4H Agricultural and Home Making Club

A total of 424 Agricultural 4H Clubs were sponsored by Agricultural Societies; 234 of these were calf clubs, 39 swine clubs, 47 grain clubs and 43 potato clubs. In practically every case the club's achievement day was held at the Fair. Societies also co-operated with Home Economists and club leaders in arranging demonstrations and displays put on by members of 4H Homemaking Clubs.

### Regional Breed Shows

Agricultural Societies co-operated with Breed Associations in sponsoring Breed Shows as follows:

<i>Breed</i>	<i>No. of Shows</i>	<i>No. Cattle Exhibited</i>	<i>No. Championship Shows</i>
Holstein (Black & White) .....	39	4,339	1
Ayrshire (Red & White) .....	14	913	2
Jersey (Parish Shows) .....	15	1,030	1
Guernsey .....	10	649	3
Shorthorn .....	8	702	0
Hereford .....	7	483	0
Aberdeen Angus .....	4	319	0
Swine .....	6	420	3
Sheep .....	5	1,029	0

### Commercial Features Exhibits

Many fair boards are taking advantage of the 50% grant provided for commercial feature displays. Some conducted two displays during 1958. Products are numerous and varied. Among those noted in the applications for approval were: feeder cattle, market lambs, bacon hogs, wool, dairy products, tobacco, turnips, hay, grain, fruit, honey, potatoes, eggs and poultry.

### T. Eaton Company Bacon Hog Special

A total of 47 fairs took advantage of this special. Results were as follows:

Pens exhibited .....	870
No. pens qualified for prizes .....	392
No. hogs grading A .....	1,818
No. hogs grading B .....	1,341

Because of the fact that over 55% of the pens exhibited did not qualify and that the quality has been declining the company has announced its decision to discontinue this special. The firm will maintain its support to fairs in other ways.

### Canada Packers Special

239 fairs made use of the specials offered in the home department by this firm. The average number of entries in the pie and cake competition was 15.9.

### IMPROVEMENTS TO GROUNDS AND BUILDINGS

Through the assistance of government grants provided for in the regulations of the Agricultural Societies Act, the majority of fair boards made a special effort to improve their property. This covered such projects as installation of extra hydro facilities, painting, renovation of existing buildings, new fences and roadways, hauling of fill, erecting of pens for hogs and sheep, also tie rails for cattle.

Under new buildings special mention should be made of the \$200,000.00 grandstand and exhibits building erected by the Lindsay Exhibition, the Agricultural and Community Centre by the Norwood Fair at a cost of \$50,000.00, Curling and Agricultural Buildings at Brampton and Orangeville, Community and Agricultural Centres at Florence and Merlin. Other types of new buildings erected by societies included grandstands, secretaries' offices, horse and cattle barns.

### Field Crop Competitions

<i>Type</i>	<i>Number of Competitions</i>	<i>Number of Competitors</i>
Oats .....	134	1,803
Barley .....	20	215
Potatoes .....	13	118
Wheat .....	8	142
Corn .....	73	1,165
Beans .....	2	30
Farmstead Improvement .....	1	12
Hay .....	9	116
Turnips .....	2	23
Roots .....	1	12
Sugar Beets .....	1	14
Pasture .....	1	11
	265	3,661

### COMPARISON WITH PAST YEARS

	1953	1954	1955	1956	1957	1958
No. Competitions .....	243	252	258	259	272	265
No. Competitors .....	3,361	3,549	3,536	3,818	4,244	3,661

Many societies conduct more than one competition. Ripley carries on a most aggressive programme in this regard. In 1958 they sponsored eight competitions with 113 competitors. Three were in oats, two in corn and one each of wheat, barley and hay.



**Seed and Sheaf Competition — C.N.E.**

Co-operation was given the C.N.E. in planning prize list and encouraging entries.

Results were as follows:

<i>Zone</i>	<i>Award</i>	<i>Class 338 Grain &amp; Seeds</i>	<i>Class 339 Sheaves</i>
1	1	Bracebridge	Bracebridge
	2	Magnetawan	Magnetawan
2	1	Renfrew	Uxbridge
	2	Carp	Orono
	3	Perth	
	4	Markham	
	5	Beaverton	
3	1	Ilderton	Mildmay
	2	Mildmay	Ripley
	3	Caledonia	Kincardine

Prize money is quite substantial with 40 percent going to the society and 60 percent to members who shared in supplying the exhibits.

**GOVERNMENT GRANTS**

The agricultural Societies Act provides a maximum of \$1,000.00 to societies on 3 year average of prize money paid exhibitors. The percentage or factor in 1958 was 33.2 as compared to 30.45 in 1957 and 26.7 in 1956. Societies in territorial districts in Ontario receive double grants but in no case does the grant exceed the limit of the Act.

The C.N.E., Toronto; Western Fair, London; and C.C.E., Ottawa, receive their prize money grants under another section of the Act. The maximum to each is \$2,500.00.

*Amount paid Societies on prize money by groups:*

Societies receiving \$200.00 or less .....	15
Societies receiving \$201.00 to \$400.00 .....	50
Societies receiving \$401.00 to \$600.00 .....	49
Societies receiving \$601.00 to \$800.00 .....	35
Societies receiving \$801.00 to \$999.00 .....	19
Societies receiving maximum of \$1,000.00 .....	75

**CAPITAL EXPENDITURE GRANTS**

All Fairs may qualify for grant on capital expenditure on improvements to grounds and buildings including new buildings on basis of 25%. The maximum on annual improvements by a C Fair is \$600.00, a B Fair \$900.00 and an A Fair \$1,500.00.

The maximum which can be earned on major projects over a period of years for a C Fair is \$25,000.00, a B Fair \$50,000.00 and an A Fair \$100,000.00.

From April 1st, 1958 to March 31st, 1959, the following grants on capital improvements were paid to societies by the Ontario Department of Agriculture:

8 A Fairs .....	\$ 72,010.00	<i>Summary of Other Grants</i>	
43 B Fairs .....	89,394.50	Northern Ontario — Special .....	50
125 C Fairs .....	40,944.25	Field Crop Competitions .....	265
		Commercial Features .....	164
		Wet Weather .....	29
	\$202,348.75	Centenary .....	12

A summary of statistics taken from 1957 financial statements of societies holding fairs shows the following:

Expenditure for agriculture .....	\$ 875,109.50
Gate Receipts .....	1,784,604.80
Municipal and County Grants .....	144,609.20
Legislative Grants (1958) on prize money including races (average for 1955, 1956 and 1957) .....	165,258.00

## ASSOCIATION ACTIVITIES

### District Meetings

Every one of the 16 Association Districts in the province sponsored a district meeting. District 10 — Grey and Bruce — as usual held two, spring and fall. For the first time Societies in Algoma and Manitoulin joined together for one meeting at Bruce Station. Timiskaming and Cochrane organized for the holding of a joint meeting two years ago and met again at Matheson. The Agricultural Societies Branch was represented at all of the 16 meetings. Excellent assistance was given by the Agricultural Representatives at these meetings. Attendance was very encouraging and programmes for both sections, men and women, in most instances were well planned. Districts 10 and 5 award a challenge trophy to encourage attendance of delegates.

### Board Meetings

Four board meetings were held during the year, two of these at convention time in February. The Women's Section, also A and B Fairs Section are represented on the board. The boards of these two sections also held meetings during the convention.

### Convention

The Association held its annual meeting and convention in the King Edward-Sheraton Hotel in February, with 400 men and 480 women delegates in attendance. Interesting topics were presented by various speakers. Forums for secretaries, treasurers and managers, also discussion groups, were featured. The displays of handicrafts and fall fair pictures drew favourable comment.

Prizes donated by the C.N.E. were presented to winners in the Coloured Photographic Competition by an official of the exhibition.

### Photographic Competition

The Canadian National Exhibition again, for the fifth time, supported a Coloured Photographic Competition conducted by this Association. Judging was done by staff members of the Public Relations Department, O.A.C., Guelph.

The championship and reserve for A and B Fairs was Markham and Brigden and for C Fairs Drumbo and Ilderton. Some 24 Societies participated.

#### Canadian Fairs Association

The annual three-day convention of this Association was held in Toronto last November. Delegates from all of the major fairs in Canada were in attendance. Mr. Hiram McCallum, General Manager of the C.N.E., was elected president for 1959 succeeding Mr. Evan McGugan of Western Fair, London.

#### International Association

The Ontario Association of Agricultural Societies is a member of the International Association of Fairs and Exhibitions. The annual meeting was held in Chicago in December and as usual a number of our Canadian Fairs were represented. Maurice Hartnett, Manager of the Calgary Stampede, was elected president and Evan McGugan, London, a director. In the competition open to state and provincial associations, the O.A.A.S. won first prize on a copy of a 1958 convention programme. Earlier copies of letterheads, constitution and by-laws, fair date list, annual report and convention programme had been submitted for competition in the Inter-State Fairs Section.

#### Manual for Secretaries and Treasurers

A three-man committee of the O.A.A.S. in co-operation with the Department of Agriculture prepared a manual for guidance of secretaries and treasurers, particularly those taking office for the first time. The manual is now being printed for distribution to all societies.

### HORTICULTURAL SOCIETIES

The general condition of horticulture in Ontario is good, as progress is being made in all branches of society endeavour. In spite of climatic conditions, which prove a serious handicap in many sections, quality material is grown, exhibited and enjoyed throughout the Province. The splendid membership, public planting, junior work and floral competitions attest to the fact that the membership is rendering an excellent service to the communities in which they operate.

#### Membership

Membership continues strong throughout the Province, now approximately 40,000. The Guelph society has a membership of 1,420, the largest in Ontario. Waterloo society numbers 1,292 for second place.

#### Grants

The appropriation for grants has reached \$35,000.00 and it has been recommended that this be increased to \$40,000.00. Thus the grant would be keeping pace with membership.

The maximum grant of \$500.00 was earned by 14 Societies. Although the appropriation for grants has been greatly increased, the maximum grant has not been changed.

#### Public Planting

Public planting was carried out by 134 Societies in the past year.



### Home Beautification

Two events are worthy of mention and praise, the first being the annual Rural Home Beautification Contest in the Smithville area, sponsored by the local society.

The second is one conducted by the Campbell Soup Company of New Toronto. This took the form of a home improvement contest, with 225 contestants, to be judged on the best appearance from the street. The Company offered prizes to the extent of \$500.00 and was assisted in the campaign by the Mimico and New Toronto Societies.

### Statistics

Preliminary reports from societies show that:

- 209 are now operating in the Province.
- 94 report a larger membership than in 1957.
- 136 held spring, summer and autumn shows, also monthly exhibits.
- 53 featured a garden competition, junior or senior.
- 85 carried out a junior programme.
- 25 sponsored essay competitions.
- 31 held photographic competitions.
- 59 held either a bird house or poster competition, or both.
- 54 report a higher expenditure than in 1957.
- 1,139 Board of Directors meetings were held during the year, an average of 7.
- 1,020 Open or public meetings were held, an average of 6.
- 1,467 Delegates attended district meetings, forums and district flower shows.

### District Meetings

Some 14 district meetings were held with total attendance of 1,467 delegates. Reports of some of these meetings are as follows:

Districts No. 1, 2 and 3 (Eastern Ontario) enjoyed a joint programme on May 24th when a visit to Ottawa permitted the members to view the festival of tulips, a tour of the city being a feature of the day.

District No. 7 had 200 delegates in attendance with the Guelph Society as host. Every society but one was represented. The annual forum of this district was held at the Ontario Agricultural College, Guelph, and was an outstanding success.

District No. 9 held a spring meeting in the nature of a forum at Niagara Falls, with the local society acting as host. The meeting featured panel discussions, addresses on various topics, demonstrations, door prizes and a floral arrangement competition for societies.

### New Societies

A new society was organized in Cumberland, Russell County, with a membership of 32. Nobleton, York County, also formed a new society with 121 members.

### Service Diplomas

There were 57 diplomas engrossed for societies and presented to members deserving of recognition.

### Awards of Merit

Diplomas of Merit were awarded to three rural schools for beautification and maintenance of grounds, and were presented through co-operation of the local Public School Inspectors.

S.S. No. 16 South Walpole — Haldimand County.

S.S. No. 5 Bentinck — Grey County.

S.S. No. 7 Kincardine & Greenock — Bruce County.

A Diploma of Merit was awarded to the Eastnor Township Society, Lion's Head, for outstanding beautification work at the Lakeshore Park.

A Silver Medal and Diploma of Merit were awarded to Mr. George T. Bell, Commissioner of Parks and Recreation for the City of Toronto, in recognition of his outstanding leadership and improvement work in the parks system of Toronto.

### TREES TO THE NETHERLANDS

Through the courtesy of the Minister of Lands and Forests, and Hon. Bryan L. Cathcart, Minister of Travel and Publicity, a gift of 2,000 seedling trees were flown to Holland to arrive at the time when our members of the Spring Garden Tour were in Amsterdam. Miss Ora G. Wickware of the Department of Agriculture, and Mr. H. S. Ransom, Kemptville Agricultural School, took part in the actual planting.

A token presentation was made on this side of the Atlantic by Hon. Bryan Cathcart and the Secretary of the Association, the recipient being Mr. Pieters, Agricultural Attache at the Dutch Embassy, who received the trees on behalf of the Queen of the Netherlands.

The actual presentation was made by the Canadian Ambassador, Hon. Mr. Stone, and received for the Dutch Government by Hon. Mr. Vondeling, Minister of Agriculture.

### The Humber Gardens

A tulip bulb planting project was started last fall in the Humber Gardens by the Ontario Horticultural Association with over 50 societies making cash donations for purchase of bulbs. The Ontario Gardeners Association and Malak of Ottawa each donated 1,000 bulbs, while the Dutch bulb growers gave 12,000 bulbs bringing the total plants to 50,000. The project was placed under the supervision of Mr. Thompson, Metro Parks Commissioner.

### Photographic Competition Winners

#### SECTION — 1 — Any Garden Feature

1. M. H. Graham, Niagara Falls — Stamford Society.
2. Brig. G. Macleod Ross, Guelph — Goderich Society.
3. Mrs. E. A. Buck, Copetown — Lynden Society.
4. Nelson Merrifield, Port Arthur — Port Arthur Society.

#### SECTION — 2 — View of Property from the Street

1. M. Ellames, Scarborough Society (4 slides).
2. D. A. Rann, Brussels Society (5 slides).
3. A. Livermore, Clinton Society (2 slides).
4. Mrs. P. K. Griggs, Guelph, R.R. 6 (1 slide).

## SECTION — 3 — Ontario Scenery

1. Mrs. S. G. Lailey, Oshawa.
2. E. K. Dawson, Chesley.
3. W. F. Barrett, Napanee.
4. Murray Muirhead, Leaside.

## SECTION — 4 — Society Projects

1. Geulph Horticultural Society (5 slides).
2. Thornhill Horticultural Society (4 slides).
3. Etobicoke Horticultural Society (junior work).
4. Scarborough Horticultural Society (5 slides).

## Royal Botanical Gardens, Hamilton

His Excellency, The Right Hon. Vincent Massey, Governor General of Canada, officiated at the formal opening of the new Headquarters Building on June 25th. This constituted a milestone in the history of these fine gardens.

## PLOWING MATCHES

Plowing Matches play an important part in the agricultural development of our country. In the early days they were a special feature at many fall fairs. In 1846 for example, a plowing match was held in conjunction with the first provincial exhibition in Toronto. The match took place on a farm just outside the municipality. When it was later found to be impractical to hold matches on fair day those interested in these contests formed their own association solely for the purpose of sponsoring matches. Today we have a number of branches with fifty or more years of operation to their credit with one or two having carried on continuously for close to a century. The Ontario Plowmen's Association was formed in 1912 and had its first match in 1913. With the exception of 1942 to 1945 (war years) a match has been held annually. This is the Association's 45th year and 40 matches have been sponsored.

1958 was a good year for these competitions. The crop season was excellent with an adequate and fairly uniform supply of moisture. Activities along plowing match lines were well maintained not only here in Ontario but elsewhere in Canada.

## Summary of Matches and Entries with 3 Year Comparison

	<i>Events</i>				<i>Entries</i>		
	1956	1957	1958		1956	1957	1958
Senior .....	67	67	67	Tractors .....	1,415	1,578	1,566
Junior .....	12	12	14	Horses .....	256	298	275
Coach Days .....	17	15	22				
Home Plowing .....	5	4	7		1,671	1,876	1,841
District Matches .....	2	2	2				

Entries in branch matches were pretty well maintained although the general trend is downward. In 1954 entries in all branches stood at 2,001. Those in horse classes showed the greatest drop. This was expected in view of the scarcity of horses on farms and the rapid change to mechanization. Horse plowing at matches has now become a novelty.

<i>High Entries</i>		<i>Prize Money</i>		<i>Membership</i>	
Haldimand .....	63	Welland .....	\$897.50	North Dumfries .....	293
Welland .....	58	Waterloo Twp. ....	874.00	Oneida .....	202
Ontario South .....	56	King & Vaughan .....	798.00	Blenheim Twp. ....	200
Oneida .....	51	Ontario South .....	761.00	Tilbury East & Romney	157



### Attendance and Prizes

Both farm and city people like to watch plowmen in competition. The expert handling of the equipment and the turning over of the dark soil in straight, uniform furrows is very fascinating. Attendance at local matches continues to be encouraging and varies from 200 to 1,000 depending on such factors as location, weather, advertising, special features, demonstrations, etc. A total of \$25,113.00 was awarded at branch matches in cash and goods as compared to \$20,724.00 in 1957.

### Branch Activities

Those which comprise the Eastern Counties Association gave their wholehearted support to the International Plowing Match by furnishing the prizes for local day and encouraging their plowmen to take part.

Practically all branch matches in the province sponsored utility and junior classes. Many held various types of demonstrations and displays of farm equipment.

Most branches took advantage of Imperial Oil Co. Ltd. Specials for best plowed land, also the Eaton's of Canada Special open only to junior plowmen. Winners qualified to enter classes supported by these firms at the International.

Congratulations are extended to North Dumfries Association in Waterloo County. They celebrated their 50th anniversary by staging one of the best matches on record, a display of antique machinery and a plowmen's dinner at the end of the day. Among the many guests was Mr. Frank Hart, Guelph, who was at one time Agricultural Representative in Waterloo and helped to organize the branch in 1908. W. C. Barrie, a director of the Ontario Plowmen's Association, was one of the farmers who had a part in that first organization meeting.

### Insurance

Branches continued to share in the Association's insurance policy arranged with a Toronto firm covering public liability and property damage. Fortunately for all concerned no claims were registered during the year. Officers expressed appreciation in being able to have a satisfactory coverage at a nominal rate.

### Judges

The Department of Agriculture, through this branch again furnished judges and coaches on request at no cost to the organizations. Some of the larger matches had the services of two judges. Nine were used at the International.

### INTERNATIONAL PLOWING MATCH

The International Plowing Match and Farm Machinery Demonstration returned to Eastern Ontario after a period of 5 years. As was expected the site at Crysler in Stormont County chosen by the United Counties Local Committee proved very satisfactory. Farmers in the area were most co-operative and the people generally did their best to make the event a success. They had the backing and financial support of the Counties Council and the City of Cornwall, the latter furnishing the funds and accommodation for the closing banquet. Excellent co-operation was also given by the Finch Township Council.

Local arrangements were well handled under Peter Manley, M.P.P., as general committee chairman and Ken. Best, Agricultural Representative, as secretary. Much help was given by the Agricultural Representatives — Jim Humphreys in Glengarry and Ed. Pearson in Dundas.

## Finances

Gate receipts on basis of 50¢ per person and 50¢ per car were collected by the local committee and used to pay expenses of labour, material and services for which the committee had assumed responsibility.

The revenue from this source for the four days as reported by the committee at the close of the match was \$17,794.40. This was somewhat lower than in 1957 when the match at Simcoe in Norfolk County showed \$21,437.57 in gate receipts.

The local committee also received the fees sent in by plowmen for teams and tractors at \$5.00 each and a percentage of the fares paid by those taking airplane rides over the site.

## Prize List — International Plowing Match

This Association published two prize lists, a preliminary one in the spring and a second and final one in the fall. The latter also served as the official programme.

## Entries

		<i>Plowing</i>			<i>Welding</i>
		<i>Horse</i>	<i>Tractor</i>	<i>Total</i>	
October 7	.....	8	55	63	13
October 8	.....	16	123	139	15
October 9	.....	14	137	151	31
October 10	.....	15	109	124	20
		—		—	
Total 1958	.....	53	424	477	79
Total 1957	.....	55	482	537	96
Total 1956	.....	111	487	598	66
Total 1955	.....	47	564	611	86
Total 1954	.....	130	739	869	81
Total 1953	.....	106	582	688	75

## Exhibitors and Caterers

Preliminary plans for Tented City called for a 4 street arrangement similar to that adopted in Norfolk in 1957. When applications for space were totalled it was found 3 streets would suffice. The amount of frontage reserved by exhibitors and caterers was not as great as in 1957. Distance to be travelled and cost of transporting exhibit supplies made it impossible for a number of the regulars to participate.

## Official Opening

The guest for the official opening was Dr. Gordon Taggart, Deputy Minister of Agriculture for Canada. He substituted for the Minister, the Hon. Douglas Harkness who found it impossible to fulfil his engagement due to more important government business overseas. Dr. Taggart was introduced by Dr. C. D. Graham, Deputy Minister of Agriculture. The Winchester High School Band led the wagons carrying a number of special guests on tour of Tented City and later provided music for the opening ceremony. A complimentary luncheon at the noon hour was provided by the Association for 135 guests. These included members of the local committee, County Wardens, County and Township Councillors, Members of Parliament, directors of the Canadian Plowing Council and a number of departmental officials.

### Visit by the Prime Minister

We were greatly honoured by a visit from The Right Hon. John Diefenbaker, Prime Minister of Canada, during the afternoon of the first day.

Practically the same party of dignitaries that participated earlier in the opening programme were on hand to extend a welcome. Following a wagon tour of Tented City the Prime Minister spoke to the several thousand visitors who had already assembled in front of the official stage. He was introduced by Grant Campbell, M.P. for Stormont and was thanked by Peter Manley, M.P.P., the local committee chairman. President, Ken. Bawden, presented him with a miniature tractor suitably inscribed as a memento of his first visit to the International Plowing Match. The Prime Minister was then taken to the plow area to meet a number of our top plowmen including those entered from other provinces in Canada. He was very much impressed with the entire show and competition and on leaving expressed his warm appreciation for the invitation extended to him by the Ontario Plowmen's Association.

### Local Day

Competition on the opening day was confined to residents of Frontenac, Leeds, Grenville, Dundas, Stormont, Glengarry, Prescott, Russell and Carleton, also the province of Quebec. Branches in these counties make up the Eastern Counties Association which in turn assisted in preparing the prize list and paid the prize money won by contestants in local day classes. There were 63 entries and prizes offered amounted to \$2,262.00. Of this total only \$1,168.00 was actually paid out in prize money.

### Inter-County Competition

The number of entries in the Inter-County Competition was 12 compared with 19 a year ago. A number of counties in Western Ontario did not enter teams because of the cost of transporting equipment and the loss of time by contestants when away from their regular activities.

As was the case in 1957 contestants plowed two lands and highest score for both was used in determining winners. Ontario County had the high team and won the British American Oil Company trip to a Canadian province. Malcolm brothers, George and Howard, were the winning team members and were coached by H. L. Fair, Agricultural Representative for Ontario County. George Malcolm had the highest individual score of the 24 contestants and was awarded the Fred G. Fuller Trophy. The team will have their names engraved on the Ontario Plowmen's Association Challenge Trophy and each member was awarded a miniature of the trophy. Runner up was a team from York County comprised of Kenneth O'Brien, Maple, and Graeme Little, Agincourt.

In co-operation with the B. A. Oil Company plans will be made for an educational trip and it is expected one of the places visited will be the Calgary Stampede in July. Kenneth Best, Agricultural Representative for Stormont, and who served as secretary of the 1958 Local Committee will accompany the Malcolm brothers as trip manager.

### Inter-Secondary School Competition

While only 11 teams took part very creditable work was done by the 22 competitors. This was only 3 teams less than in 1957. The winners were from West Haldimand High School Area and team members were Ronald Hewitt, York and James Roberts, Hagersville. They won the Canada Packers Challenge Trophy and



each received a gold wrist watch from the same company. Ronald Hewitt was also a member of the school team which placed 2nd at Simcoe in 1957. The high individual score was on work done by Duncan MacDonald, a member of the Charlottenburgh-Lancaster District High School team which stood 2nd. He had 79.4 points while Ronald Hewitt had 79.2. Much credit must go to the Oneida Branch of the Ontario Plowmen's Association for backing and encouragement received by the West Haldimand School Team. Without their support and full co-operation of the school officials the team's entry in the contest would not have been possible.

### Ontario Championship Class

This class has been included since 1953 and is planned as a satisfactory means of choosing entries from Ontario to compete with teams from other provinces in the Canadian Championship Contest. There were 16 entries compared with 19 in 1957 but competition was as keen as ever. Each was required to plow two lands under World Plowing Match rules. Charles Bonney, Princeton won first place with Grant Wells, Stouffville, as runner-up. Both qualified as Ontario's entry in the Canadian Contest.

### Esso Championship Class

This class has been a special feature of the Match for many years and is open only to those who had won Esso Specials at branch matches. The usual class for horse drawn plows was eliminated and instead the first and second prize winner in tractor plowing were awarded the Canadian trip and medals by the Ontario Division, Imperial Oil Ltd.

There were 15 entries and top place was won by Ivan McLaughlin, Stouffville, with George Dixon, Georgetown, second. These plowmen along with George Hay, Marvellville, 1st vice-president of this Association will be given a Canadian trip at the expense of Imperial Oil. There is a possibility the party may visit Manitoba at the time of the Portage la Prairie Match in June.

### CANADIAN CHAMPIONSHIP CLASS

Seven provinces were again represented in this class namely British Columbia, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. Each had two plowmen except British Columbia. Because of the expense involved only one contestant participated from that province. Two lands were plowed under World Match Rules and competition was extremely keen. The class was conducted under the auspices of the Canadian Plowing Council. Cash prizes offered were provided by Imperial Oil Limited and this same firm provides the Silver Plow Challenge Trophy for the winner also a plaque suitably inscribed. It went to Charles Bonney, Princeton, who earlier in the week won the Ontario Championship. Grant Wells, Stouffville, was placed 2nd but because of the fact a province cannot have more than one representative on the Canadian team to the World Match the honour went to Carl Willis, Cornwall, Prince Edward Island. Carl's father, Stanley Willis, was his coach and it is interesting to note Stanley plowed for Canada in the World Match at Peebles, Ohio, in 1957.

Charlie and Carl will go to Coleraine, Ireland, next October along with Ed. Hudek, Winnipeg, vice-president of the Canadian Plowing Council, to participate in the World Match.

The 1957 team, Joe Tran, Claremont, and Allan Hammond, Lachute, Quebec, also Gordon McGavin, Walton, their trip manager, report a most successful competition at Stuttgart, West Germany, last October.

### Visitors Classes

A total of \$560.00 in cash prizes were offered to visitors in two separate classes. Thirteen prizes offered among the 42 classes in the prize list were won by plowmen from the province of Quebec.

### Eaton's of Canada Class

For many years this firm has substantially supported the International and its branches. A change was made in their class whereby it was restricted to Eaton's of Canada winners at branch matches in 1957. Contestants had to be juniors under 18 years of age. The firm provided \$340.00 in cash with 1st prize of \$100.00 and a handsome trophy. It was won by Ronald Hewitt, Haldimand County.

### Welding Competition

Competitions in welding have been held as part of the International since 1950. As usual the arrangements were well organized by Prof. Jas. Scott, O.A.C. and in co-operation with Mr. Frank Parish and his staff at the Kemptville Agricultural School. A judge was supplied through the courtesy of the Canadian Welding Bureau. Total entries were 79 as compared to 96 in 1957, but were just about average of the past six years.

Floyd Forsyth, Stouffville, won both Championships in Oxy-acetylene Welding and in Arc Welding. It was the first time a contestant had won both awards.

### Demonstrations

These included drainage, tractor safety and tree planting. A new type of demonstration was added whereby machinery companies were invited to demonstrate their latest plows. Four firms co-operated, namely: Allis-Chalmers, Rumely, J. I. Case, Massey-Ferguson and International Harvester and a complete land was plowed on each of two days.

### Banquet

The prize presentation banquet provided by the City of Cornwall was held in the Armouries at the close of the match and was attended by approximately 1,000 guests. It was well organized and credit for this must go to the chairman, Mr. W. S. Fraser and his committee. Among the guests were Cabinet Ministers including the Hon. W. A. Goodfellow, who brought greetings from the province and the Department of Agriculture, Federal and Provincial Members of Parliament, County and Township Officials, donors of prizes, plowmen, members of local committees, farmers loaning land, tractors and equipment, O.P.A. and Department of Agriculture officials and visiting plowmen from other provinces including officers and members of the Canadian Plowing Council.

### Daily Programme

Again the Association was favoured with a daily programme printed and distributed by the Family Herald. The programmes serve to acquaint visitors with the events taking place each day. They also include list of winners of the previous day and where the plowing classes are being held.

### Public Stage

Since the mobile stage was not available one had to be erected and this proved to be a very useful facility. It was located to the east of our Administration Building and in front of the CBC tent. All programmes including the official opening were conducted from this stage, also the flag raising ceremony each day.

### CBC and Local Radio Stations

Excellent coverage of daily events was given by CBC and the local radio stations at Cornwall and CFRA, Ottawa.

### Telephones

Excellent co-operation was given by officials of the Bell Telephone Company in arranging, installing and conducting the usual telephone service. Long distance telephones were set up in Tented City area for the benefit of everyone connected with the match.

### Provincial Police

Under the capable supervision of Inspector Reavley, Cornwall and arranged through the courtesy of the Hon. Kelso Roberts, Attorney General, a very efficient service was provided by the provincial police in the handling of traffic and keeping a watchful eye on the activities particularly those taking place in Tented City.

### Gasoline

The Ontario Division of Imperial Oil Limited, as has been the case for many years, supplied without charge all the gas and oil needed to operate tractors during the contest also tractors used on wagon tours.

### Administration Building

For several years Pierson Buildings Ltd., has supplied a building suitable for our administration offices. They again repeated this courtesy for which the Association is most grateful.

### Wagon Tours

Excellent co-operation was given by the local Junior Farmers Association and branches in arranging through machinery companies for equipment and conducting wagon tours for the benefit of our visitors. Their efforts create much good will and are an indication of their desire to help make the International a success.

### Farmstead Improvement Competition

While this was a local project open only to farm people in the United Counties the Association had a part by providing a grant of \$600.00 which was one-third of the prize money offered. The Department of Agriculture through the Agricultural and Horticultural Societies Branch supplied the judges.

The three hundred farms entered in the contest were scored in the spring and again in the fall. Prizes were given out at a get-together of contestants, officials and donors held in Tented City.

These competitions help to dress up a county in readiness for visitors who will be attending the plowing match. These contests not only improve the appearance but enhance the value of the property in every instance.



## Exhibitors Continue to Patronize the Match

From the 80 questionnaires returned some interesting information was revealed regarding the number of years exhibitors have participated.

Over 20 years .....	10	1 - 5 years .....	11
10 - 20 years .....	21	Exhibiting for first time .....	19
5 - 10 years .....	19		

The 1959 match is to be held on the Hannah Farm at Peters Corners, near Dundas in Wentworth County, October 13, 14, 15 and 16.

## COMMUNITY CENTRE GRANTS

Paid during fiscal year — April 1, 1958 — March 31, 1959

<i>County</i>	<i>Municipality</i>	<i>Amount</i>
Algoma .....	Elliot Lake (Improvement District) .....	\$ 5,000.00
	Laird Township .....	150.00
	Sault Ste. Marie .....	5,095.00
	Thessalon .....	500.00
	Wicksteed Township .....	4,935.00
	Dunns Valley (School Area) .....	285.00
Bruce .....	Kinloss Township .....	265.00
	Lucknow .....	3,745.00
	Ripley .....	180.00
	Tara .....	2,515.00
Carleton .....	Ottawa .....	27,665.00
Cochrane District .....	Cochrane .....	1,660.00
	Smooth Rock Falls .....	500.00
Dundas .....	Williamsburg .....	390.00
	Winchester .....	2,700.00
Durham .....	Cartwright Township .....	970.00
	Darlington Township .....	5,665.00
	Newcastle .....	170.00
	Port Hope .....	2,290.00
Essex .....	Windsor .....	870.00
Frontenac .....	Kingston .....	5,000.00
Grenville .....	Kemptville .....	540.00
Grey .....	Chatsworth .....	8,425.00
	Chatsworth .....	8,425.00
	Egremont Township .....	2,500.00
	Euphrasia Township .....	620.00
	Flesherton .....	465.00
	Holland Township .....	1,100.00
	Owen Sound .....	2,545.00
	Sullivan Township .....	585.00
	Sydenham Township .....	2,018.00
Haldimand .....	.....	.....
Haliburton .....	Bicroft (Improvement District) .....	3,225.00

<i>County</i>	<i>Municipality</i>	<i>Amount</i>
Halton .....	Burlington .....	640.00
	Milton .....	5,000.00
	Oakville .....	10,000.00
	Trafalgar Township .....	5,810.00
Hastings .....	Belleville .....	350.00
	Thurlow Township .....	1,570.00
Kenora .....	Ignace Township .....	1,015.00
	Sioux Lookout .....	2,660.00
Kent .....	Chatham .....	10,000.00
	Dresden .....	580.00
	Chatham Township .....	1,015.00
Lambton .....	Euphemia Township .....	4,555.00
	Moore Township .....	1,800.00
	Oil Springs .....	1,000.00
Lanark .....	Lanark Village .....	175.00
Lennox & Addington .....	Townships of Denbigh, Abinger & Ashby .....	280.00
Lincoln .....	Caistor Township .....	1,210.00
	Niagara Township .....	2,000.00
Manitoulin .....	Tehkummah Township .....	345.00
Middlesex .....	Adelaide Township .....	70.00
	Biddulph Township .....	3,565.00
	Lobo Township .....	755.00
	London Township .....	6,220.00
	London (City of) .....	6,875.00
	McGillvray Township .....	75.00
Muskoka .....	Westminster .....	200.00
	Chaffey Township .....	320.00
	Watt Township .....	50.00
	(Crerar) River Valley .....	7,295.00
Norfolk .....	N. Walsingham Township .....	375.00
Ontario .....	Brock Township .....	1,480.00
	Cannington (Town of) .....	5,000.00
	Oshawa (City of) .....	5,000.00
	Scott Township .....	220.00
	Whitby Twp. — Oshawa (S.S. No. 9) R.R. 3 .....	790.00
Oxford .....	Ingersoll .....	10,000.00
Peel .....	Toronto Township .....	240.00
Perth .....	Elma Township .....	6,945.00
	Fullarton Township .....	35.00
Peterborough .....	Douro Township .....	910.00
	Otonabee Township .....	665.00
Rainy River .....	Fort Frances .....	2,600.00
	Rainy River (Town of) .....	1,350.00
Renfrew .....	Deep River (Improvement District) .....	10,000.00
	Arnprior .....	5,000.00
Russell .....	Rockland .....	5,000.00
	Russell Township .....	5,000.00

<i>County</i>	<i>Municipality</i>	<i>Amount</i>
Simcoe .....	Oro Township .....	2,500.00
	Penetanguishene .....	5,000.00
	Sunnisdale Township .....	5,000.00
Stormont .....	Roxborough Township .....	60.00
Sudbury District .....	Espanola (Town of) .....	4,500.00
	Onaping (Improvement District) .....	5,000.00
	Rayside Township .....	635.00
	Sudbury (City of) .....	5,000.00
Thunder Bay District .....	Port Arthur .....	5,000.00
Timiskaming .....	South Neebing Township .....	175.00
	Virginiatown .....	340.00
Victoria .....	Laxton, Digby & Longford Townships .....	515.00
	Sommerville Township .....	800.00
Waterloo .....	Wellesley Township .....	630.00
	Wilmot Township .....	2,600.00
	Woolwich Township .....	1,465.00
Welland .....	Bertie Township .....	2,070.00
	Fonthill (Village of) .....	555.00
	Thorold Township .....	860.00
	Wainfleet Township .....	1,760.00
Wellington .....	Arthur (Village of) .....	1,290.00
	Drayton .....	50.00
	Minto Township .....	200.00
Wentworth .....	West Flamborough Township .....	2,385.00
	Saltfleet Township .....	1,050.00
	Waterdown (Village of) .....	2,840.00
York .....	Aurora .....	5,000.00
	Leaside .....	5,000.00
	Scarborough .....	22,250.00
	Swansea (Village of) .....	5,000.00
	Toronto (City of) .....	15,000.00
	Vaughan Township .....	730.00
	York Township .....	5,000.00

## SUMMARY OF GRANTS PAID UNDER COMMUNITY CENTRES ACT

Fiscal Year 1958 — 1958

*Projects*

Arena .....	11	Arena & Hall .....	8
Hall .....	48	Outdoor Rink .....	13
Athletic Field .....	87	Swimming Pool .....	9
			—
			186
			—

<i>Year</i>	<i>Number of Projects</i>	<i>Amount</i>
1958-1959	186	\$338,933.00



## *Dairy Branch*

The purpose of the Dairy Branch is to work for the improvement of the dairy industry in the province and to be of service in any way possible to all sections of the industry. In addition, the Branch personnel has the responsibility of the enforcement of The Milk Industry Act, 1957 and regulations. The Milk Industry Act, 1957 provides for the appointment of a Dairy Commissioner who is responsible for the co-ordination and supervision of the administration. Provision is also made for the appointment of the Milk Industry Board of Ontario which has the prime responsibility of decision and enforcement of the Act.

Unfortunately, during the year Mr. Erle Kitchen, a member of the Board, was forced to retire because of ill health. He was replaced by Mr. Gordon Greer of Ottawa. The present Board is constituted as follows — Judge A. B. Currey, Chairman — Mr. W. Frank Jones, Member and Mr. Gordon Greer, Member — Mr. A. P. Clark, Secretary.

The Dairy Branch for administrative purposes is divided into two divisions, the fluid milk division with Mr. C. M. Meek as Director and Mr. A. P. Clark as Assistant Director — and the milk products division with Mr. J. L. Baker as Director, Mr. J. C. Palmer, Associate Director, and Mr. J. M. Bain, Assistant Director. Mr. J. C. Palmer as well as acting as Associate Director of the Milk Products Division has also been given over-all responsibility for milk quality work. Mr. J. M. Bain's main responsibility is the supervision of all aspects of the cheese industry.

The legislation also provides for the appointment of a Milk Industry Advisory Committee, with the task of advising the Minister and the Dairy Commissioner on industry matters. This Advisory Committee has been made up of six processors and six producers. It was first appointed in 1957. With the more active interest of the Ontario Milk Producers' Co-ordinating Board and the Ontario Dairy Processors' Council in advisory functions, latterly the Advisory Committee has not functioned. It is hoped however, that as time passes this Advisory Committee will play a more important part — not only from the standpoint of possible advisory functions, but also as a common meeting place for processor and producer leaders in the industry.

The Ontario Milk Producers' Co-ordinating Board, made up of the four executives of the producer associations within the industry, first provided for in The Milk Industry Act, 1954, has continued under The Milk Industry Act, 1957.

At the moment, the province is divided into 26 districts. Each district is in charge of a senior fieldman who is responsible under the Act for all aspects of the production and marketing of milk and cream. Because of the concentration of cheese production in certain areas, several fieldmen have the sole responsibility for this section of the industry, but operate under the general supervision of the senior dairy fieldman in each area. At the present time there are 26 senior fieldmen in charge of areas — 10 fieldmen responsible for the cheese industry — two auditors and field supervisors — one chief cheese instructor in Eastern Ontario and two fieldmen for the purposes of The Oleomargarine Act and The Edible Oil Products Act. There is a total of 43 men on the Dairy Branch field staff. The recent re-organization of the field staff and consolidation of territories has resulted in smaller territories for the fieldmen, the avoidance of duplication of effort, savings in mileage covered, and a closer contact between the fieldmen and the industry.

Under The Milk Industry Act, 1957, provision is made for the appointment of a Formula Committee for fluid milk pricing with a further provision that this Committee can recommend an acceptable formula to the Milk Industry Board, who, in turn, may, under the legislation by regulation approve the formula and refuse to file any fluid milk agreement between producers and distributors where the agreement is not in accordance with the price formula for fluid milk. The Formula Committee was appointed by order-in-council under date of December 5, 1957 as follows — Chairman, Everett M. Biggs, Members, Dr. H. L. Patterson and Professor Ralph Campbell. The formula developed by the committee and recommended to the Milk Industry Board was accepted and a regulation has been in effect during the past year, applying the formula to all agreements in markets.

### Exhibitions and Fairs

The Dairy Branch head office and field staff have co-operated and helped with the exhibition and fair committees in connection with the following:

The Royal Winter Fair,  
Canadian National Exhibition,  
Ottawa Winter Fair,  
Western Fair,  
Middlesex Seed Fair  
and the North Bay Rotary Fair.

The Dairy Branch Staff in co-operation with the Canadian National Exhibition and the Ontario Milk Producers' Co-ordinating Board arranged a Dairy Queen Competition at the Canadian National Exhibition for the third year in 1958. This competition is under the sponsorship of the Milk Producers' Co-ordinating Board. Forty-six young farm women from various counties in the province competed for the title of Dairy Queen 1958. The winner was Miss Jeanette Lockman of Brant County. As a special prize Miss Lockman was awarded a trip to the United Kingdom via Pan American Airways and represented the dairy industry in England and particularly at the National Dairy Show in London, England, in October 1958. Plans have been completed for a similar competition to be held in 1959.

### Milk Quality

Further progress has been made with the Milk Quality Programme in the province. Provincial regulations are in effect covering the quality of all milk produced for manufacturing purposes and the quality of all milk produced for fluid purposes, including the standards of sanitation for production conditions. The Dairy Branch field personnel has been giving supervision to fluid milk quality and farm production conditions in those areas in which there was no municipal supervision and this policy will be gradually extended to other areas. The supervision of fluid milk quality within Lincoln County has been taken over by the Dairy Branch at the request of the St. Catharines and Lincoln Health Unit. Mr. J. C. Palmer, Associate Director, Milk Products Division, has been placed in charge of the quality programme.

The aim of the Milk Quality Programme is to bring all milk produced for fluid milk purposes to a common high quality, with uniform requirements for production conditions and equipment. At the same time, a uniform quality is also being sought for all milk. For the time being, this quality will not be quite as high as that required for fluid milk but eventually through a programme of extension, it is hoped that all milk produced in the Province of Ontario for human consumption and processing will be brought to a common standard.

Professor Fred W. Hamilton has been appointed Extension Dairy Fieldman, working out of the Department of Dairy Science at the Ontario Agricultural College. While Professor Hamilton has an appointment under the Department of Dairy Science, his travelling expenses are paid through the Dairy Branch and his extension work is co-ordinated by the Dairy Branch. In his work Professor Hamilton is concerned with producer problems as well as plant problems insofar as they affect quality. A programme of extension improvements has been started and will continue in various parts of the province with both producers and processors. In addition, Professor Hamilton will be given specific assignments in certain areas where the industry is experiencing particular difficulties.

### Staff

In the year 1958-59, the following from the Dairy Branch staff superannuated: Mr. E. T. Rogers of the cheese instructional staff, who had been with the Dairy Branch on cheese work since the first of April, 1922; Mr. Geo. Pollard, who had been with the cheese instructional staff since the first of May, 1935. Mr. Henry F. Doseger, who entered the service on August 26th, 1958, resigned effective February 28th, 1959, to enter industry. Mr. C. E. Lackner who joined the service the first of May, 1920 and who for many years was Director of the Dairy Branch and, latterly of the Milk Products Division, superannuated effective the 27th of July, 1958. He has been replaced as Director of the Milk Products Division by Mr. J. L. Baker.

The following appointments were made to replace field staff who retired — Mr. G. E. White, who has been assigned the territory of Peel, Halton and Dufferin; Mr. A. W. Whitehead, the territory of Sudbury, Temiskaming and Cochrane Districts; and Dr. J. E. Mumford, who is in charge of milk quality control work in Lincoln County.

### Publications

The Dairy Publications Committee under the Department of Agriculture has continued to function under the chairmanship of the Dairy Commissioner. It is the function of the Committee to work closely with the industry and with the Ontario Agricultural College and the Kemptville Agricultural School and others to determine publication and bulletin needs.

### Research

The Dairy Branch has continued to co-operate with the Ontario Agricultural College and the Kemptville Agricultural School in certain dairy research projects. In order to give a closer liaison with both the producing and processing side of the industry insofar as research problems are concerned, an Ontario Dairy Research Committee was appointed. This committee is under the chairmanship of Dr. D. M. Irvine of the Department of Dairy Science at O.A.C., with the following members — E. M. Biggs, C. M. Meek, J. L. Baker, J. C. Palmer of the Dairy Branch Staff, Owen Irvine, Kemptville Agricultural School, two producer members and two processor members.

In addition to the central committee, within the producer associations a special sub-committee on research has been appointed. Similarly, with the processors a sub-committee has been appointed to study and report on processor problems. It has been recognized that attention must be given to the two types of research; i.e., basic research and also applied research to deal with day to day problems. It is therefore the function of this committee through a closer contact with the industry which has been arranged, to have a thorough picture of what the industry require-



ments are. The committee will also function in co-ordinating research projects which are being carried out between the various research institutions in order to avoid overlapping in some cases and, to supplement research work or complement it in others. As well, it has been recognized that one of the weaknesses in the past has been the availability of proper facilities to provide up-to-date research information to the industry and to the Dairy Branch field staff. It is hoped that through the functioning of the Provincial Research Committee these shortcomings will be corrected.

### Courses

During the year 1958-59, members of the Dairy Branch staff co-operated as instructors in the 3-month dairy short courses at the O.A.C. and at the Kemptville Agricultural School during the period of January to March. In addition to the regular Dairy Short Courses, special courses were held at the O.A.C. to qualify drivers for bulk milk tanks as testers and graders of milk. The Dairy Branch also assisted with instructors on these courses.

### Press, Radio and Television

During the year, closest co-operation has been maintained with the press, radio and television. Members of the Dairy Branch Staff have made several radio broadcasts, some telecasts and several recordings on dairy subjects for local station broadcasting. In 1959, January, the Dairy Commissioner participated in a special C.B.C. telecast on the agricultural outlook for 1959 in Canada.

### Meetings Attended Outside of Ontario

Mr. C. M. Meek attended the Annual Meeting of the National Dairy Council, held in Montreal in September, 1958. Mr. J. L. Baker attended the Annual Meeting and addressed the convention of the Manitoba Dairymen's Association, held in Winnipeg in February 1959. Mr. Everett Biggs attended and addressed the Annual Meeting of the Dairy Farmers of Canada, held in Calgary in January 1959. Mr. J. M. Bain attended the Annual Meeting of the Wisconsin Cheesemakers' Association and acted as judge in the World Cheddar Cheese Competition in October, 1958. In September 1958, Mr. J. C. Palmer and three members of the field staff attended the Annual Meeting of the International Milk Sanitarians' Association held in New York City. At the special invitation of the Dairy Branch of Prince Edward Island, Mr. J. M. Bain conducted a special cheesemaking course there in May 1958.

### The Oleomargarine Act

The Oleomargarine Act is administered by the Dairy Commissioner, who is appointed as Chief Inspector under the Act. All manufacturers and wholesalers of oleomargarine are licensed. Strict supervision is given to the advertising of oleomargarine, to the composition of the products and its sale in wholesale outlets, retail outlets and in eating establishments. Two field inspectors devote all of their time to the enforcement of The Oleomargarine Act. In addition, 26 members of the Dairy Branch field staff are appointed as inspectors under The Oleomargarine Act. The Dairy Branch fieldmen are not required to carry out routine inspections under this Act but are available in case of specific problems within their territory.

The following is a summary of the inspections made under The Oleomargarine Act — April 1, 1958 — March 31, 1959:

Total No. of Towns, Villages and Cities covered .....	163
" " " Manufacturing plants licensed .....	10

"	"	"	Wholesalers licensed .....	130	
"	"	"	" checked .....	40	
"	"	"	" licensed as a result of inspection .....	2	
"	"	"	Restaurants inspected .....	1,924	
"	"	"	" not using margarine in any form .....	1,062	55.19%
"	"	"	" using margarine for cooking .....	525	27.28%
"	"	"	" " for toast .....	105	5.46%
"	"	"	" " for sandwiches .....	232	12.06%
"	"	"	" mixing margarine with butter .....	174	9.04%
"	"	"	" complying with regulations .....	55	
"	"	"	Brands of margarine being sold .....	32	
"	"	"	Retail outlets checked .....	1,030	
"	"	"	Moisture Tests made .....	34	

There were 111 analyses made on oleomargarine samples by the Ontario Research Foundation for this office — Also, 40 lots of coloured oleomargarine were placed under detention by our inspectors and subsequently confiscated.

### The Edible Oil Products Act, 1952

The Edible Oil Products Act comes under the supervision of the Dairy Commissioner, who is appointed Chief Inspector under the Act. The field inspectors appointed under The Oleomargarine Act also act as inspectors under The Edible Oil Products Act. The Act allows for the licensing of all manufacturers and wholesalers of edible oil designated products in the Province of Ontario, a designated product being one which does not contain a dairy product and is manufactured by any means by which fat or oil other than that of milk has been processed or mixed or blended with one or more ingredients, so that the resultant product is an imitation of or resembles any dairy product. Only one manufacturer was licensed as such, and as a wholesaler, of a designated product in the current year.

### FLUID MILK DIVISION

This section of the report is largely statistical, giving information on the Fluid Milk Distribution Industry and the administration of The Milk Industry Act, 1957, in respect to fluid milk, by The Milk Industry Board of Ontario and the Dairy Branch.

The dairy industry is one of the main sources of farm income. The farm value of milk produced on Ontario farms in 1958 approximates \$186,869,000. Of this amount the fluid milk producers received \$87,000,000 approximately for milk sold to milk distributors as the following table shows:

#### TOTAL MILK PURCHASES FROM FARMERS BY COMMERCIAL DAIRIES FOR FLUID SALES

	1957	1958
Total Standard and Special		
Fluid Milk bought (lbs.) .....	1,506,470,667	1,512,066,700
Average price per cwt. ....	\$4.81	\$4.95
Total Cost .....	\$72,406,473	\$74,780,000
<hr/>		
Total Standard and Special		
Secondary Milk bought (lbs.) .....	351,770,780	422,759,100
Average price per cwt. ....	\$2.80	\$2.80
Total Cost .....	\$9,840,480	\$11,854,600
<hr/>		
Total Milk bought (lbs.) .....	1,858,241,447	1,934,825,800
Average price per cwt. ....	\$4.43	\$4.48
Total Cost .....	\$82,246,853	\$86,634,600

*FLUID MILK SALES (QUARTS) IN ONTARIO*

<i>Year</i>	<i>Yearly</i>	<i>Average Monthly</i>	<i>Average Daily</i>
1938	240,465,400	20,038,783	658,809
1939	250,406,200	20,867,183	686,044
1940	269,203,700	22,433,641	737,544
1941	290,089,400	24,174,116	794,765
1942	325,159,100	27,096,591	881,107
1943	386,644,500	32,220,375	1,059,300
1944	409,964,000	34,163,666	1,121,499
1945	432,857,000	36,071,416	1,185,909
1946	467,736,000	38,978,000	1,281,468
1947	436,459,000	36,371,583	1,195,778
1948	424,100,000	35,341,666	1,161,917
1949	433,005,000	36,083,750	1,186,315
1950	433,950,200	36,162,516	1,188,904
1951	442,319,500	36,859,958	1,211,834
1952	442,886,611	36,907,217	1,213,388
1953	460,042,200	38,336,850	1,260,389
1954	477,221,800	39,768,483	1,307,457
1955	502,009,400	41,834,100	1,375,400
1956	513,407,625	42,783,968	1,406,596
1957	535,612,000	44,634,333	1,467,430
1958	544,027,600	45,335,633	1,490,000

(From Monthly Dairy Report, Ontario Department of Agriculture)

<i>Year</i>	<i>Fluid Milk Quarts</i>	<i>Fluid Cream Quarts</i>	<i>Chocolate Dairy Drink-Quarts</i>	<i>Buttermilk Quarts</i>	<i>Skim Milk Quarts</i>
1945	432,857,000	12,367,000	16,322,000	5,536,000	
1946	467,736,000	13,519,000	17,081,000	5,697,000	
1947	436,459,000	13,496,000	11,880,000	5,024,000	
1948	424,100,000	12,722,000	10,988,000	4,768,000	
1949	433,005,000	12,985,000	11,049,000	5,410,000	
1950	433,950,000	13,506,000	11,461,000	4,891,000	
1951	442,232,500	13,501,400	14,922,700	5,672,600	
1952	443,660,500	13,677,700	14,575,500	5,588,500	18,277,500
1953	460,042,200	14,714,300	13,848,600	6,501,200	20,740,400
1954	477,221,800	15,265,800	11,805,900	6,700,800	24,081,800
1955	502,009,400	16,068,200	14,428,500	8,006,200	27,662,100
1956	513,407,625	17,184,509	15,612,300	7,598,500	30,462,800
1957	535,612,000	17,903,200	15,072,000	8,367,500	34,924,500
1958	544,027,600	18,835,900	14,795,700	7,887,800	35,593,800

**Three-Quart Glass Containers**

In 1956 this type of container was introduced in the distribution of fluid milk, mainly for distribution to the chain and independent grocery stores. While only a few of the smaller markets have commenced using this container, it has made considerable headway in our larger markets, notably in the Toronto market.

A survey on the use of this container in the Toronto market is recorded as follows:

**SALES OF STANDARD FLUID MILK — THREE-QUART GLASS CONTAINER**

Percentage of Total Milk Sold

1957	1st Quarter	—
	2nd "	1.74
1958	1st Quarter	3.46
	2nd "	3.89



**Two-Quart Containers (Glass and Paper)**

This type of container (glass) was started in 1957 and the paper container appeared in 1958, Toronto being the market where it has been generally adopted. A survey of its acceptance is reported by distributors as follows:

*SALES OF STANDARD MILK — TWO-QUART CONTAINERS*

<i>Quarter</i>	<i>Glass % of Quarterly Sales</i>	<i>Paper % of Quarterly Sales</i>
1957 — Second .....	3.08	—
Third .....	5.11	—
Fourth .....	6.40	—
1958 — First .....	6.72	1.04
Second .....	6.76	3.69

The glass container is used mostly for distribution direct to the home, while the paper container is confined largely to distribution to the store trade.

**Paper Containers — Quart**

As in recent years, paper containers have not been popular for distribution direct to the homes of consumers. They have, however, been well received for the sale of fluid milk out of stores.

A survey in the Toronto market shows the trend in paper compared to glass in quarts, pints and half-pints.

*SALES OF STANDARD MILK IN TORONTO (Quarterly)*

<i>Quarter</i>	<i>One Quart</i>		<i>One Pint</i>		<i>Half-Pint</i>	
	<i>Glass % Quarterly</i>	<i>Paper % Quarterly</i>	<i>Glass % Quarterly</i>	<i>Paper % Quarterly</i>	<i>Glass % Quarterly</i>	<i>Paper % Quarterly</i>
1957 — First .....	71.90	17.51	1.71	2.30	1.21	1.61
Second .....	68.02	16.22	1.90	2.51	1.10	1.62
Third .....	62.22	18.71	1.91	3.02	.81	1.60
Fourth .....	60.20	18.20	1.62	2.30	1.12	1.55
1958 — First .....	61.49	17.01	1.49	2.01	1.12	1.53
Second .....	59.50	16.22	1.53	2.31	.97	1.54

*SALES OF PARTLY SKIMMED MILK BY COMMERCIAL DAIRIES IN ONTARIO  
NOVEMBER, 1956 to MARCH, 1959*

<i>Month</i>	<i>Sales (Quarts)</i>	<i>Sales Index Nov. 1956 — 100</i>
November, 1956 .....	1,022,700	100
December .....	1,245,900	121.8
January, 1957 .....	1,279,900	125.1
February .....	1,361,200	133.1
March .....	1,690,700	165.3
April .....	1,791,100	175.1
May .....	1,859,700	181.8
June .....	1,913,900	187.1
July .....	1,739,300	170.1
August .....	1,828,200	178.8
September .....	1,992,500	194.8
October .....	2,380,800	232.8
November .....	2,518,200	246.2

December .....	2,595,000	253.7
January 1958 .....	2,638,600	258.0
February .....	2,552,400	249.6
March .....	2,891,300	282.7
June .....	2,802,198	274.
November .....	3,487,407	341.
March, 1959 .....	3,835,222	375.

### Consumer Prices

Consumer prices reflect the price paid by distributors for fluid milk purchased from fluid milk producers and since the producer price did not change in the majority of the markets, there was not any general upward revision of prices to consumers such as happened in 1957 when there was an increase in most of the fluid milk markets of one cent per quart. Prices to the consumer have been very competitive in the markets where multiple milk containers have been introduced. In the Toronto market consumer prices have been lowered in the multiple container. The prevailing price in 1957 was 19 cents per quart or 57 cents for milk in the three-quart container when purchased from grocery stores and in 1958 this price was reduced to 55 cents per three-quart jug. The delivered to home price held firm at 24 cents per quart.

The differential in price between milk sold in the three-quart jug and the price in the quart bottle delivered is not as great in most of the other markets where three-quart jugs are used.

### PRICE FORMULA FOR FLUID MILK

A method spoken of as The Formula Method, for determining the price to be paid for fluid milk supplied by producers to distributors, was studied for a number of years by a committee of Agricultural Economists and Dairy Branch officials appointed by the Minister of Agriculture in 1951. In 1954 a formula was submitted to the Fluid Milk Industry Provincial Associations who received it well and included it in collective bargaining negotiations on producer prices.

Agreements, for many markets, filed with the Board from 1954 to 1957 included the formula.

The Legislature in 1957 provided authority whereby the Board may make regulations approving the price formula for fluid milk. The Board did this by making a Regulation filed as 105/58 which stipulates that the Board refuses to file an agreement where the prices are not in accordance with the price formula.

### PRICE FORMULA CALCULATIONS

Month	Formula Price		Change in Price		Basic Price
	Monthly	3 Months Average	Monthly Plus or Minus	3 Months Average Plus or Minus	
July '54	4.48	4.48			4.53
July '55	4.645	4.62	.115		4.53
Aug. '56	4.716	4.66	.186	.13	4.53
Sept. '56	4.7238	4.6955	.1938	.1655	4.53
Oct. '56	4.7463	4.7288	.2163	.1987	4.72
New Basic Price effective November 1, 1956 — \$4.72					
July '57	4.8943	4.8903	.1743	.1703	4.72

Month	Formula Price		Change in Price		Basic Price
	Monthly	3 Months Average	Monthly Plus or Minus	3 Months Average Plus or Minus	
Aug. '57	4.9286	4.9066	.2086	.1866	4.72
Sept. '57	4.9419	4.9216	.2219	.2016	4.91

New Basic Price effective October 1, 1957 — \$4.91

Oct. '57	4.9653	4.9452	.0553	.0352	4.91
Nov. '57	4.9532	4.9534	.0432	.0434	4.91
Dec. '57	4.9469	4.9551	.0469	.0451	4.91
Jan. '58	4.9355	4.9452	.0255	.0352	4.91
Feb. '58	4.9690	4.9504	.0590	.0404	4.91
Mar. '58	4.9172	4.9405	.0072	.0305	4.91
Apr. '58	4.9719	4.9529	.0619	.0429	4.91
May '58	4.9599	4.9496	.0499	.0396	4.91
June '58	4.9857	4.9725	.0757	.0625	4.91
July '58	4.9936	4.9797	.0836	.0697	4.91
Aug. '58	5.0064	4.9952	.0960	.0852	4.91
Sept. '58	5.0332	5.0110	.1230	.1010	4.91
Oct. '58	5.0282	5.0226	.1180	.1126	4.91
Nov. '58	5.0234	5.0282	.1134	.1182	4.91
Dec. '58	5.0266	5.0260	.1166	.1160	4.91
Jan. '59	5.0450	5.0316	.1350	.1216	4.91
Feb. '59	5.0544	5.0420	.1444	.1320	4.91
Mar. '59	5.0196	5.0396	.1096	.1296	4.91

It will be noted that there has not been a change of 19 cents per hundred during the year and accordingly no change in producer prices is indicated by the formula.

## BULK MILK HANDLING

The farm bulk tank method of handling milk continued to grow and as of March 31, 1959 some 3,700 producers supplying fluid milk markets, or approximately one-third of the fluid milk producers in this Province, have installed farm bulk tanks. This phenomenal growth from a small start in 1954 by one dairy with one transport tank and fifteen producers is set out in the following table.

### GROWTH OF BULK METHOD OF HANDLING MILK

Market	Number of Dairies				Number of Bulk Transports				Number of Bulk Producers			
	'56	'57	'58	'59	'56	'57	'58	'59	'56	'57	'58	'59
Aurora	1	2	2	1	2	3	3	2	38	55	56	36
Barrie	1	1	1	1	1	1	1	1	35	31	38	41
Bolton	—	1	1	1	—	1	1	1	—	7	8	7
Bowmanville	—	—	1	1	—	—	1	1	—	—	13	13
Cobourg	—	—	—	1	—	—	—	1	—	—	—	7
Elmira	—	—	—	1	—	—	—	1	—	—	—	5
Fort William	—	—	1	2	—	—	1	2	—	—	19	68
Galt	—	—	1	1	—	—	1	1	—	—	18	19
Georgetown	—	—	—	1	—	—	—	1	—	—	—	11
Guelph	—	1	1	1	1	2	2	2	—	30	31	31
Hamilton and Dundas	1	2	4	4	1	2	6	11	12	10	97	215
Ingersoll	—	1	1	1	—	1	1	1	—	8	9	8
Kitchener	1	1	1	1	1	2	2	2	32	36	37	37
London	—	1	1	1	—	1	1	1	—	27	35	34
Markham	—	1	1	1	—	1	1	1	—	8	8	8



Newmarket	---	1	1	1	---	1	1	2	---	8	8	46
Oakville	---	---	---	1	---	---	---	1	---	---	---	23
Orillia	---	---	---	2	---	---	---	2	---	---	---	48
Oshawa	1	3	3	3	2	5	5	5	29	95	95	92
Ottawa	---	1	1	2	---	1	1	4	---	26	24	103
Pembroke	---	---	1	1	---	---	1	1	---	---	11	11
Port Hope	---	---	1	1	---	---	1	1	---	---	17	16
Smiths Falls	---	1	2	2	---	1	2	2	---	4	12	12
St. Catharines	---	1	1	2	---	2	2	3	---	43	41	66
Toronto	7	12	15	18	11	39	110	136	292	952	2,169	2,717
Welland	---	---	---	1	---	---	---	1	---	---	---	35
Whitby	1	1	1	1	1	1	1	1	15	16	15	16
Woodbridge	---	---	1	1	---	---	1	1	---	---	18	19
Woodstock	---	1	1	1	---	1	1	1	---	9	8	8
Total	13	32	44	56	20	65	147	190	453	1,365	2,787	3,752

### BULK MILK COURSES — DAIRY DEPARTMENT, O.A.C.

Courses of instruction for the operators of Bulk Tank trucks, transporting milk from the farm to the milk plant, which commenced in 1955 were continued and are herein reported.

The Dairy Department of the Ontario Agricultural College has conducted these courses giving instruction on the grading, sampling and testing of milk for butterfat and for bacterial activity.

<i>Date of Course</i>	<i>Students Registered</i>
1955—April 12 to 19 .....	18
October 5 to 14 .....	11
1956—April 18 to 27 .....	23
October 1 to 10 .....	23
1957—April 22 to May 1 .....	39
October 15 to 24 .....	46
1958—April 15 to 25 .....	35
April 29 to May 9 .....	31
September 9 to September 19 .....	43

### LICENCES ISSUED

<i>Year</i>	<i>Regular Distributor</i>	<i>Producer Distributor</i>	<i>Peddler</i>	<i>Milk Transporter</i>	<i>Milk Manufacturer</i>	<i>Shop-Keeper Distributor</i>	<i>Total</i>
1934	Not Differentiated						1,335
1935	Not Differentiated						1,624
1936	647	861	87	177	28		1,800
1937	750	924	87	205	32		1,998
1938	598	850	90	220	36		1,794
1939	607	590	150	235	38		1,620
1940	610	572	129	231	40		1,582
1941	635	490	116	230	40		1,511
1942	624	440	100	182	43		1,389
1943	610	452	125	181	43		1,411
1944	615	415	72	184	46		1,332
1945	624	389	76	239	46		1,374
1946	642	346	83	264	48		1,383
1947	641	237	83	233	55		1,299
1948	630	192	86	272	53		1,233
1949	603	154	75	273	51		1,156
1950	618	137	80	261	50		1,146
1951	582	119	74	259	48		1,082

1952	578	102	84	247	44	1,055
1953	558	84	99	247	43	1,031
1954	535	80	90	251		956
1955	530	73	59	260		922
1956	532	65	54	251	1	903
1957	515	61	47	220	2	845
1958	500	55	44	188	1	788

TABLE ON MARKET INFORMATION AS OF MARCH 31, 1959, showing:

1. Prevailing retail consumer prices by markets, per quart standard milk delivered. (These are competitive prices, there being no control of consumer prices.)
2. Producer prices in all markets. The letter "F" beside the price means Formula price. The letters "FM" mean Fluid Milk. The letter "A" means an Award by the Board.
3. Markets with collective bargaining Agreements or Awards on producer prices. Markets which have not filed agreements show only the price being paid.

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
.28	Chapleau .....	6.12F	58-30FM
.27	Hornepayne .....		
.26	Blind River .....	5.69F	58-31F
	Espanola .....	5.69F	59-11FM
	Geraldton-Beardmore .....	5.80	
	Massey .....	5.69F	59-11FM
	Nipigon .....	5.50F	57-34
	Sault Ste. Marie .....	5.69F	A57-5F
	Thessalon .....	5.69F	A57-5F
.25	Ansonville .....	5.50F	A54-1
	Capreol .....	5.57F	58-19FM
	Cochrane .....	5.55F	58-9FM
	Copper Cliff .....	5.57	57-44F
	Dryden .....	5.40F	58-11FM
	Elk Lake .....	5.43F	59-6FM
	Englehart .....	5.43F	59-6FM
	Fort William .....	5.40F	58-4F
	Hearst .....	4.60	
	Iroquois Falls .....	5.50F	A54-1
	Kapusking .....	5.56F	56-19
	Kirkland Lake .....	5.43F	57-18
	Matachewan .....	5.43F	57-18
	Mattawa .....	5.00	59.4FM
	Matheson .....	5.43F	57-42F
	Levack .....	5.57	57-44F
	New Liskeard .....	5.43F	59-6FM
	North Bay .....	5.19F	A57-4
	Port Arthur .....	5.40F	58-4F
	Port Colborne .....	4.96F	A54-3
	Sturgeon Falls .....	5.19F	57-38F
	Sudbury .....	5.57	57-44F
	Timmins .....	5.65F	57-21
	Varner .....	5.19F	57-38F
.24	Blenheim .....	4.77	57-32

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
.24	Beamsville.....	4.96F	A54-3
	Bracebridge.....	4.91F	54-28
	Chatham.....	4.96F	A54-5
	Chalk River.....	4.91	
	Cooksville.....	4.91F	54-41
	Dresden.....	4.96F	A54-5
	Dundas.....	4.96F	57-33
	Essex.....	4.96F	A54-6
	Fort Erie.....	4.84F	59-5FM
	Fort Frances.....	5.20	54-1
	Gravenhurst.....	4.91F	54-28
	Grimsby.....	4.96F	57-33
	Haliburton.....	4.78	59-3FM
*	Huntsville.....	4.91F	54-28
	Kenora.....	5.00F	58-12FM
	Leamington.....	4.96F	A54-8
	Niagara Falls.....	4.96F	A54-3
	Niagara-on-the-Lake.....	4.96F	A54-3
	Oakville.....	4.96F	54-28
	Ottawa.....	4.96F	58-7FM
	Parry Sound.....	4.91F	A58-3
	Pembroke.....	4.91F	54-28
	Port Dalhousie.....	4.96F	A54-3
	Powassan.....	4.91F	58-14FM
	Richmond.....	4.96F	58-18FM
	Ridgetown.....	4.96F	A54-5
	Ridgeway - Fort Erie.....	4.84F	59.5FM
	St. Catharines.....	4.96F	A54-3
	Sarnia.....	4.91F	54-28
	South River.....	4.91F	58-14FM
	Sioux Lookout.....	5.40F	58-26FM
	Stoney Creek.....	4.96F	57-33
	Thorold.....	4.96F	A54-3
	Tilbury.....	4.96	56-8
	Toronto.....	4.91F	54-41
	Wallaceburg.....	4.96F	A54-5
*	Hamilton.....	4.96F	57-33
.24	Welland.....	4.96F	A54-3
	Wheatley.....	4.96	56-12
	Windsor.....	4.96F	A54-9
	Woodbridge.....	4.80F	57-23
.23	Acton.....	4.81F	54-32
	Ajax.....	4.81	
	Arnprior.....	4.81F	54-28
	Aurora.....	4.78F	57-48F
	Barrie.....	4.81F	54-28
	Belleville.....	4.74F	57-10
	Blyth.....	4.62F	A59-1
	Bolton.....	4.69F	57-23
	Brampton.....	4.81F	54-28
	Brantford.....	4.81F	A54-2
	Brigden.....	4.91F	59-1FM
	Brockville.....	4.81F	54-28
	Burks Falls.....	4.91F	58-14FM
	Caledonia.....	4.93F	58-6FM
	Clinton.....	4.62F	A59-1



<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Cobourg.....	4.81F	54-28
	Collingwood.....	4.81F	54-35
	Comber.....	4.59	
	Cornwall.....	4.81F	56-5
	Dunnville.....	4.88F	55-11
	Exeter.....	4.62F	A59-1
	Galt.....	4.81F	54-28
	Gananoque.....	4.81F	57-3
	Georgetown.....	4.81F	54-28
	Goderich.....	4.62F	A59-1
	Gore Bay.....	4.69	
	Guelph.....	4.81F	54-28
	Hespeler.....	4.81F	54-28
	Ingersoll.....	4.81F	A58-2FM
	Kincardine.....	4.62F	A57-3
	Kingston.....	4.81F	54-28
	Kingsville.....	4.96F	A54-7
	Kitchener.....	4.81F	54-28
	LaSalle.....	4.96F	54-6
	Lindsay.....	4.81F	54-28
	Little Current.....	4.88F	58-3F
	London.....	4.81F	57-47F
	Milton.....	4.81F	54-28
	Napanee.....	4.81F	57-7
	Newmarket.....	4.81F	54-37
	Orillia.....	4.76F	54-28
	Oshawa.....	4.81F	55-6
	Owen Sound.....	4.81F	54-30
	Paris.....	4.81F	54-28
	Peterborough.....	4.81F	54-28
	Petrolia.....	4.91F	54-28
	Port Elgin.....	4.62F	A57-3
	Port Hope.....	4.81F	54-28
	Preston.....	4.81F	54-28
.23	Rainy River.....	4.91F	58-17FM
	Renfrew.....	4.81F	54-28
	Selkirk.....	4.88	
	St. George.....	4.81	
	St. Marys.....	4.81F	54-28
	Southampton.....	4.62F	A57-3
	Stayner.....	4.81F	54-35
	Stratford.....	4.81F	54-28
	Strathroy.....	4.81F	56-9
	Sundridge.....	4.91F	58-14FM
	Thamesville.....	4.67F	58-34FM
	Tobermory.....	4.62F	A57-3
	Trenton.....	4.74F	58-13FM
	Waterdown.....	4.96F	57-33
	Waterloo.....	4.81F	54-28
	Whitby.....	4.81F	54-40
	Wiarton.....	4.62F	A57-3
	Wingham.....	4.62F	A59-1
	Woodstock.....	4.81F	A58-2FM
	Windermere.....	4.91F	58-15FM
.22	Alliston.....	4.88	56-2
	Alvinston.....	4.60	

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Arthur.....	4.62F	58-29FM
	Aylmer.....	4.62	58-2F
	Bancroft.....	4.30	
	Barry's Bay.....	4.40	
	Beeton (Farm).....	4.13	58-21FM
	Bowmanville.....	4.81F	54-28
	Brighton.....	4.55F	58-1F
	Campbellford.....	4.62F	58-10FM
	Chatsworth.....	4.43F	A58-6FM
	Chesley.....	4.62F	A57-3
	Colborne.....	4.55F	58-1F
	Creemore.....	4.40	
	Delhi.....	4.62F	57-46F
	Durham.....	4.62F	58-27FM
	Eganville.....	4.60F	59-18FM
	Elmira.....	4.63	
	Erin.....	4.62F	A58-5FM
	Fergus.....	4.63F	59-8FM
	Forest.....	4.68	58-36FM
	Glencoe.....	4.62	58-38FM
	* Hagersville.....	4.60	
	* Hawkesbury.....	4.58F	58-20FM
	Hensall.....	4.62F	A59-1
	Lakefield.....	4.50	
	Lion's Head.....	4.62F	A57-3
	L'Original.....	4.54	
	Listowel.....	4.62F	A59-2
	Lucan.....	4.50	
	Lucknow.....	4.62F	A57-3
	Meaford.....	4.81F	57-27
	Markdale.....	4.40	
	Markham.....	4.62F	58-25FM
	* Hastings.....	4.43F	58-23FM
	* Havelock.....	4.43F	58-23FM
.22	Midland.....	4.62	
	Mildmay.....	4.62F	A57-3
	Milford Bay.....	4.91F	58-5FM
	Millbrook.....	4.62F	58-32FM
	Milverton.....	4.34	
	New Hamburg.....	4.50	
	Noelville.....	5.00	57-29
	Norwich & Otterville.....	4.50F	58-33FM
	Norwood.....	4.43F	58-23FM
	Orangeville.....	4.62F	A57-6F
	Orono.....	4.55 (farm)	
	Paisley.....	4.62F	A57-3
	Penetang.....	4.62	
	Perth.....	4.24	
	Port Dover.....	4.62	
	Port McNicholl.....	4.62	54-28
	Port Perry.....	4.62F	58-37FM
	Prescott.....	4.68	
	Russell.....	4.69	
	St. Jacobs.....	4.60	
	St. Thomas.....	4.62F	57-46FM
	Shelburne.....	4.62	57-6F
	Simcoe.....	4.62F	57-46FM

<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Smiths Falls.....	4.62F	A58-1F
	Smithville P.D. ....		
	Stouffville.....	4.62F	58-25FM
	Sutton West.....	4.81F	58-28FM
	Tamworth.....	3.75	
	Teeswater.....	4.62F	A57-3
	Thornbury.....	4.62F	58-39FM
	Tillsonburg.....	4.62F	57-46FM
	Tottenham (Farm).....	4.29	58-16FM
	Uxbridge.....	4.62F	58-35FM
	Vankleek Hill.....	4.58F	58-22FM
	Victoria Harbour.....	4.62	
	Walkerton.....	4.62F	A57-3
	Waterford.....	4.62	
.21	Ailsa Craig.....	4.49	57-17
	Athens.....	3.54	
	Bloomfield.....	4.48F	57-31
	Burford.....	4.62F	59-9FM
	Carleton Place.....	4.15	
	Cherry Valley.....	4.48F	57-31
	Coldwater.....	4.57F	59-10FM
	Cumberland.....	3.75	
	Dundalk.....	4.18	
	Elora.....	4.44	59-2FM
	Frankford.....	4.24	
	Hanover.....	4.62	
	Kemptville.....	3.90	57-41F
	Lanark.....	3.79	
	Mount Forest.....	4.45	
	Oil Springs.....	4.60	
.21	Pakenham P.D. ....		
	Picton.....	4.48F	57-31
	Rockwood.....		
	Seaforth.....	4.62F	A59-1
	Scotland P.D. ....		
	Thedford.....		
	Tweed.....	4.00	57-37F
	Wellington.....	4.48F	57-31
.20	Alfred.....	3.50	
	Almonte.....	3.91	
	Bobcaygeon.....	3.70	
	Cardinal.....	4.00	55-10
	Cayuga P.D. ....		
	Chesterville.....	3.80	
	Clifford.....	4.25	
	Drayton.....	4.25	
	Fenelon Falls.....	3.88	
	Harriston.....	4.09	
	Lancaster.....	3.70	
	Madoc.....	3.89	56-21
	Marmora.....	3.89	
	Merrickville.....	3.79	
	Mitchell.....	4.20	
	Morrisburg.....	4.00	
	Palmerston.....	4.10	
	Plantagenet.....	3.50	



<i>Retail Price</i>	<i>Market</i>	<i>Producer Price</i>	<i>Agreement or Award</i>
	Rockland.....	3.85	
	Stirling.....	4.00	
	Westport.....	3.54	
	Zurich.....	4.62F	A59-1
.19	Brussels.....	4.62F	A59-1
	Casselman P.D.....		
	Neustadt P.D.....		
	Parham.....	3.84	
	Tavistock.....	3.50	
.18	Winchester.....	3.50	55-12
.17	Alexandria.....	3.40	

## FIELD WORK

### Local Fieldmen

As a result of the reorganization of the Dairy Branch Staff, no separate report on the field work done by local Fieldmen in fluid milk plants will be made. The work of the Field Staff since April 1, 1958 embraces work in all types of plants, fluid, butter, cheese and concentrated milk plants and includes as well farm visitations and inspections and special investigations. This work is reported in a later table entitled "Summary of activities of Dairy Branch Fieldmen."

### Head Office Fieldmen

Two Fieldmen work out of Head Office supervising the work of local Fieldmen and in addition do audit work which includes investigating the records of fluid milk distributors to see that producer prices, provided for in collective bargaining agreements filed with the Board by producers and distributors, are paid. Special investigations are also conducted to gather information on the industry matters required by the Board.

### Bonding of Distributors

The regulations provide that distributors shall furnish security, in the form of Government bonds or Surety bonds, for the protection of milk producers. During the fiscal year ending March 31, 1959, an amount of \$4,498,246.00 in the form of Government and Surety bonds was on deposit with the Board. It was not necessary to call any bonds for default in payments to producers.

## MEETINGS OF THE BOARD ON FLUID MILK AND MILK PRODUCTS MATTERS APRIL 1, 1958 to MARCH 31, 1959

Meetings held .....	33
Decisions made .....	545
Arbitration hearings re Producer Prices and Milk Transportation Rates .....	9

## MILK PRODUCTS DIVISION

### Milk Products Division

This division supervises the production of milk and cream used for the manufacture of milk products other than fluid milk products, including the three dairy

producer marketing plans. The milk and cream quality and farm service extension programme is supervised by the Associate Director and is reported under that section.

### The Dairy Producers' Marketing Plans

Three marketing plans operate under The Milk Industry Act, 1957, namely, The Ontario Cheese Producers' Marketing Plan, The Ontario Concentrated Milk Producers' Marketing-for-processing Plan, and The Ontario Cream Producers' Marketing-for-processing Plan. The general activities of the respective local boards operating under these plans are as follows:

#### The Ontario Cheese Producers' Marketing Plan

The Ontario Cheese Producers' Marketing Board functions under this plan. This local board consists of seven members. One member is appointed from each of six districts in the province for a three-year term, so arranged that two districts elect their members each year. The seventh member is appointed at large by the six elected members. Until June 26th a provision was made in the regulations under the plan for a marketing agency and The Ontario Cheese Producers' Co-operative Limited was the designated agency. This agency purchased all first grade cheese offered but not otherwise purchased on a cheese exchange. The financing of any cheese purchased had been supported in part by the Federal government and by a bank loan guaranteed by the Ontario Government. In 1957 this agency had purchased approximately 18 million pounds of first grade cheese and thus was able to support the cheese industry in that year to the financial benefit of the cheese milk producers. At the end of March, 1959, the Ontario Cheese Producers' Co-operative Limited had disposed of all but approximately one million and a half pounds of their holdings, a considerable quantity of which had gone to the United Kingdom.

Two cheese exchanges operated under the supervision of the local board at Kingston and Stratford with the former using the Dutch Auction Clock.

An agreement for minimum prices for cheese made on December 6, 1957, of 32 cents for first grade, 30 cents for second grade and 30½ cents for third grade, F.O.B. factory at Stratford and 32¢ for first grade F.O.B. factory at Kingston continued in force until May 9, 1958, which was followed by the following two agreements:

Agreement Number _____	58-1MP	58-2MP
Filing Date _____	May 9, 1958	May 21, 1958
Canada First Grade Cheese _____	34	34
Effective Date _____	May 9, 1958	May 21, 1958

Minimum prices in the above agreements are F.O.B. cheese storages approved by the Agricultural Stabilization Board and were the same as the federal government support price.

Shortly after the filing of agreement 58-2MP the negotiating committee agency met and as it was unable to reach an agreement, proceeded to arbitration. Before arbitration proceedings took place, the local board asked for revocation of the regulations providing for the marketing agency and The Ontario Cheese Producers' Co-operative Limited applied to The Milk Industry Board for a licence as a buyer of cheese. The regulations respecting the marketing agency were revoked by The Milk Industry Board and the Co-operative was issued a licence as a buyer of cheese.

Number of licences as buyers of cheese issued were:

55 in 1957 and 52 in 1958.





1958

Jan.	1 - 15	13¢	"	"	"	"	"	"	"	63.15¢
"	16 - 31	12¢	"	"	"	"	"	"	"	62.85¢
Feb.	1 - 28	10¢	"	"	"	"	"	"	"	62.38¢
Mar.	1 - 15	11¢	"	"	"	"	"	"	"	62.54¢
"	16 - 31	12¢	"	"	"	"	"	"	"	62.96¢
April	1 - 30	13¢	"	"	"	"	"	"	"	63.10¢
May	1 - 15	11¢	"	"	"	"	"	"	"	62.68¢
"	16 - 31	12¢	"	"	"	"	"	"	"	62.75¢
June	1 - 30	12¢	"	"	"	"	"	"	"	62.85¢
July	1 - 31	12¢	"	"	"	"	"	"	"	62.86¢
Aug.	1 - 31	12¢	"	"	"	"	"	"	"	62.87¢
Sept.	1 - 15	12¢	"	"	"	"	"	"	"	62.90¢
"	16 - 30	13¢	"	"	"	"	"	"	"	63.01¢
Oct.	1 - 15	13¢	"	"	"	"	"	"	"	63.07¢
"	16 - 31	14¢	"	"	"	"	"	"	"	63.31¢
Nov.	1 - 15	15¢	"	"	"	"	"	"	"	63.55¢
"	16 - 30	16¢	"	"	"	"	"	"	"	63.9¢
Dec.	1 - 15	16¢	"	"	"	"	"	"	"	63.9¢
"	16 - 31	17¢	"	"	"	"	"	"	"	64.0¢

1959

Jan.	1 - 31	17¢	"	"	"	"	"	"	"	64.0¢
Feb.	1 - 28	17¢	"	"	"	"	"	"	"	64.0¢
Mar.	1 - 31	17¢	"	"	"	"	"	"	"	64.0¢

With support price of butter at 64¢ since May, 1957, the escalator clause has always resulted in an increase in milk prices. With powder supports at 17¢ and 14¢ for spray and roller powder respectively, effective May 1, 1957, minimum prices increased. However, as surplus stocks began to build up and with a lowering of support prices to 15¢ and 12¢ respectively a continued drop in milk prices has been indicated except that some strengthening took place in the import categories.

The negotiating committee for case goods also failed to reach agreements in negotiations and the matters in dispute were settled by arbitration. The awards made for milk testing 3.5% milk fat, F.O.B. plant, for manufacture into case goods are as follows:

Award Numbers	57-2	57-4MP	57-6MP	58-2MP
Filing Date	May 31/57	Sept. 24/57	Nov. 26/57	Aug. 11/58
For manufacture into case goods				
(a) for domestic consumption	\$3.10	\$3.10	\$3.00	\$2.96
(b) for export	2.90	2.90	2.80	2.76
Effective Date	June 1	Sept. 24	Nov. 26	Aug. 11

During 1957 local agreements for charges for transportation of milk for processing were made at Napanee and Gananoque but none were made during 1958.

#### The Ontario Cream Producers' Marketing-for-processing Plan

The Ontario Cream Producers' Marketing Board operates under this plan as the local board. While a negotiating committee is set up to negotiate minimum prices

for cream for processing into butter it has not as yet filed an agreement although for the past two years has unofficially agreed to a minimum price for first grade fat picked up at the farm at the same price as that set for the floor price on butter. The local board requested and was granted by The Milk Industry Board an increase in licence fees from 1/10¢ per pound milk fat to 3/10¢. Approximately half of the increase was set aside for the cream producers' contribution to The Dairy Farmers of Canada advertising programme. The balance of the increase was to compensate for loss of revenue through diversion of cream producers to milk producers.

### Plant Licences

All plants manufacturing milk products which are not designated as fluid milk products require a licence to operate under The Milk Industry Act, 1957. O. Reg. 88/58 require also that such plants in addition to meeting all other requirements of the regulations must satisfy the Board as to their financial responsibility in making payments to producers for milk and cream which they purchased.

All plants which have been issued their licence in 1958 have satisfied the Board as to their financial responsibility.

### Plant Licences Issued

	1957	1958
Creameries only .....	165	136
Cheese Factories only .....	191	170
Processing Plants only .....	80	85
Milk Receiving Stations only .....	17	19
Cream Receiving Stations only .....	*	5
Combined Creameries and Cheese Factories .....	7	8
Combined Creameries and Milk Separating Plants .....	1	4
Combined Creameries and Processing Plants .....	40	39
Combined Creamery and Milk Receiving Station .....	0	1
Combined Cheese Factory and Processing Plant .....	5	3
Combined Cheese Factory, Creamery and Processing Plant .....	7	7
Combined Cream Receiving Station and Milk Separating Plant .....	*	1
Combined Cream Receiving Station and Cheese Factory .....	*	1
Combined Cream Receiving Station and Processing Plant .....	*	2
Combined Cream Receiving Station, Cheese Factory and Processing Plant .....	*	1
	<hr/> 513	<hr/> 482

\* Cream receiving stations did not require a licence prior to 1958.

### Production of Milk Products in Ontario

Total milk production in Ontario in 1958 increased approximately 4.5% over 1957. The most notable increase in product production was that of skim milk powder being approximately 52% more than 1957. This is a new record high and was brought about by the favourable price supports for powder and butter. There was considerable diversion from cream production to milk production at this source. As a result these producers themselves increased their own milk supply. Butter also increased in production by about 17% over 1957. Cheese production declined by 4%. Ice cream production remained about the same but declines in production were shown for most other products notably, condensed milk 4.0%, evaporated milk 4.5%, whole milk powder 1.0%, whole milk by-products 5.0% and non whole milk by-products 3.0%.

## Production Statistics

	1957	1958
Creamery Butter .....	77,422,000 lbs.	89,488,000 lbs.
Cheddar Cheese .....	65,269,000 lbs.	61,950,000 lbs.
Other Cheese (not including cottage) ....	6,835,000 lbs.	6,598,000 lbs.
Cottage Cheese (including creamed) ....	8,642,000 lbs.	8,330,000 lbs.
Ice Cream .....	13,289,000 gals.	13,635,000 gals.

## Concentrated Milk Products:

	1957	1958
Condensed Whole Milk .....	13,908,000 lbs.	13,315,000 lbs.
Evaporated Whole Milk .....	103,632,000 lbs.	97,989,000 lbs.
Powdered Whole Milk .....	17,652,000 lbs.	17,498,000 lbs.
Condensed Skim Milk .....	3,195,000 lbs.	2,771,000 lbs.
Dry Skim Milk (spray process) .....	37,316,000 lbs.	61,280,000 lbs.
Dry Skim Milk (roller process) .....	12,830,000 lbs.	16,029,000 lbs.
Dry Buttermilk .....	3,741,000 lbs.	3,760,000 lbs.
Miscellaneous Whole Milk By-products (including malted milk, partly skimmed, evaporated milk, etc.) .....	17,220,000 lbs.	16,333,000 lbs.
Miscellaneous By-products (including evaporated skim milk, lactose, casein, etc.) .....	18,980,000 lbs.	18,425,000 lbs.

Of the total production in Canada, Ontario produced 69.4% of the cheese compared with 66.1% in 1957; 26.8% of the creamery butter compared with 25.5% in 1957; 41.4% of the concentrated milk products compared with 45.2% in 1957; and 37.0% of the ice cream compared with 37.8% in 1957.

Some 6 billion pounds of milk were produced in Ontario in 1958 compared with 5,736 million pounds in 1957.

Ontario produced 33.3% of the total Canadian milk production as compared with 33.1% in 1957.

The approximate farm value of the milk used for manufacture, distribution or farm use is as follows:

	1957	1958
Creamery Butter .....	\$ 38,651,000	\$ 46,901,000
Factory Cheese .....	19,729,000	18,734,000
Ice Cream .....	5,623,000	5,780,000
Concentrated Whole Milk Products .....	11,820,000	11,486,000
Fluid Sales .....	84,977,000	88,251,000
Farm Consumed, etc. ....	15,348,000	15,681,000
Total farm value .....	\$176,255,000	\$186,869,000

The value of these milk products at the plants is estimated at \$270,960,000 compared with \$251,287,000 in 1957.

Approximately 92.4% of the total milk production in Ontario is received at the plants.



Milk (including cream converted to milk) received at plants was utilized as follows:

	1957	1958
Creamery Butter .....	34.3%	37.7%
Cheddar Cheese .....	13.2%	12.3%
Other Cheese (Whole Milk) .....	1.5%	1.3%
Fluid Milk .....	32.4%	31.2%
Fluid Cream .....	5.7%	5.6%
Condensed Whole Milk .....	0.6%	0.6%
Evaporated Whole Milk .....	4.6%	4.1%
Dry Whole Milk (including malted baby food, etc.) .....	3.4%	3.0%
Ice Cream .....	4.3%	4.2%

Approximately 44.75% of the milk fat used for the manufacture of creamery butter goes into the plants in the form of milk. This is a sharp increase from 30.0% in 1957. The skim milk from this source is mainly manufactured into skim milk powder as is most of that from milk where the fat is used in the sweet cream trade. The balance of this skim milk is used to manufacture evaporated skim milk, condensed skim milk, cottage cheese, casein and other non-fat milk products.

#### Statistical Summary of Plants Manufacturing Milk Products, Including Milk and Cream Receiving Stations

	1957	1958
Total plants Operating .....	**	478
Creameries (making creamery butter) .....	217	196
Cheese Factories .....	205	189
Processing Plants .....	150	127
Cream Receiving Stations .....	10	12
Milk Receiving Stations .....	**	20
Milk Separating Plants .....	**	27
Approximate pounds butter made from milk to plants .....	23,992,000	40,056,000
Making Cheddar Cheese .....	192	181
Making Other Types of Cheese .....	28	25
Making Cottage Cheese .....	**	100
Cheese Factories Separating Whey .....	182	164
Plants Making Whey Butter .....	91	62
Plants Making Dry Milk .....	29	35
Plants Making Evaporated or Condensed Milk .....	16	9
Plants Making Ice Cream Mix and Ice Cream .....	92	95
Plants Making Casein .....	4	3
Plants Making Miscellaneous Products .....	*	16
Number of Cream Producers .....	49,950	36,656
Number of Milk Producers (Cheese) .....	14,002	8,857
Number of Milk Producers (Concentrated) .....	16,752	19,725
% Cream Self-delivered by Producers .....	35.2	36.4
Average per cent fat in cream from producers .....	32.9	33.6
Average per cent fat in milk (cheese) .....	3.33	3.35
Average per cent fat in milk (concentrated) .....	3.53	3.51
Average pounds milk to make a pound of cheese .....	11.33	11.18
Average price first grade cream (milk fat at farm) .....	60.9¢	62.53¢
Average price 100 lbs. milk (cheese) at farm .....	\$2.50	\$2.60
Average price 100 lbs. milk (concentrated) at farm .....	\$2.58	\$2.70
Canada Quality Premium per Pound Cheese .....	1.046¢	0.942¢
Average price first grade butter (solids) .....	58.94¢	62.45¢
Average price cheddar cheese per pound .....	33.90¢	34.62¢
Average price evaporated milk per pound case goods .....	12.96¢	13.12¢
Average price dry skim milk per pound (spray process) .....	17.92¢	15.82¢
Average price dry skim milk per pound (roller process) .....	15.00¢	13.01¢

Average price dry skim milk per pound (animal feed) .....	9.28¢	7.82¢
Average price dry whey per pound .....	6.98¢	6.58¢
Average price dry buttermilk per pound .....	8.34¢	7.25¢
Average price casein per pound .....	26.62¢	25.13¢
Average price sweet cream per pound milk fat .....	82.01¢	84.12¢

\* Not available in 1957.

\*\* Combined with processing plants in 1957.

Dairy plants in Ontario are becoming more and more diversified in their operations. It is now very difficult to segregate the plants into their individual product categories. The milk coming into the plants may be diverted into the manufacture of any product either within the plant or by transshipping.

### Certificates for Buttermakers and Cheesemakers

All plants making butter and cheese in Ontario are required to have a person holding a certificate as a buttermaker in charge of their buttermaking operations and a person holding a certificate as a cheesemaker in charge of their cheesemaking operations.

#### Buttermakers' Certificates Issued

	<i>First Class</i>	<i>Second Class</i>	<i>Temporary</i>	<i>Beginner</i>	<i>Total</i>
1957	191	10	1	20	222
1958	167	8	—	23	198

#### Cheesemakers' Certificates Issued

	<i>Variety</i>	<i>First Class</i>	<i>Second Class</i>	<i>Temporary</i>	<i>Beginner</i>	<i>Total</i>
1957	4	143	25	11	23	206
1958	8	120	38	12	15	193

### Quality of Milk Products

Federal grading standards are set up by regulation for butter, cheese and skim milk powder and the biggest percentage of these three products is graded.

#### Federal Grading of Ontario Butter

	<i>Total Pounds Graded</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Third Grade</i>	<i>% Below Third Grade</i>	<i>% Scoring 93 Points or Higher</i>
1957	55,087,816	97.56	2.16	0.22	0.06	26.27
1958	67,672,472	97.45	2.33	0.15	0.07	30.21

While a slight decrease is indicated in overall first grade quality, there was a general marked increase in the quantity of high scoring first grade butter manufactured. This is an all-time high for high scoring butter, being 4.06% higher than 1957. 74.99% of Ontario butter was graded in 1958 compared with 68.89% in 1957.

#### Federal Grading of Ontario Cheese

	<i>No. Boxes Graded</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Third Grade</i>	<i>% Below Third Grade</i>
Western Ontario .....	80,867	95.03	4.95	0.02	0.00
Central Ontario .....	116,299	95.75	4.12	0.13	0.00
Eastern Ontario .....	474,238	91.53	7.88	0.55	0.04
Northern Ontario .....	1,793	95.76	4.13	0.11	0.00
Total 1958 .....	673,197	92.69	6.87	0.41	0.03
Total 1957 .....	656,898	95.90	3.94	0.14	0.02

As the federal government, under The Cheese and Cheese Factory Improvement Act, pays a quality premium on high scoring cheese at the rate of 1¢ per pound for 93 score and 2¢ per pound for 94 score and higher, the following gives these quality scoring summaries for Ontario cheese in 1957 and 1958:

	<i>% 94 Score and higher</i>	<i>% 93 Score</i>	<i>% 92 Score</i>	<i>% Below 92 Score (under First Grade)</i>
1957	34.07	38.89	22.14	4.90
1958	25.55	43.12	24.02	7.31

It is noted that there is a decline of approximately 8.5% in the 94 score cheese and a decline of a little more than 4% in premium eligible cheese from 1957. In addition this is a further decline of nearly 2.5% in first grade cheese. While there was a decline in 1957 from 1956 because of the introduction of the extraneous matter test as a grade requirement, this was not a factor in 1958. With very few exceptions all cheddar cheese in Ontario passed the extraneous matter test in 1958. The decline in quality was due mainly to new techniques to streamline manufacturing and reduce costs. Some problems still remain to be corrected. It is expected when these are rectified cheese quality will again rise with resultant reduced manufacturing costs.

97% of all cheddar cheese manufactured in Ontario was graded.

#### Federal Grading of Edible Dry Skim Milk in Ontario

	<i>Total Pounds Graded</i>	<i>% First Grade</i>	<i>% Second Grade</i>	<i>% Below Second Grade</i>
1957	34,155,900	94.1	3.4	2.5
1958	51,387,100	90.4	6.3	3.3

There was a decline of 3.7% in first grade powder in 1958 from 1957. This was partly caused by a number of new plants commencing to operate. Through inexperience, they did not at the start, produce a quality product. The raw milk supply was another contributing factor in the quality decline.

Only 66.5% of the edible dry skim milk was graded in 1958 compared with 68% in 1957.

#### Butter Quality Improvement Competitions and Exhibition Butter

1958 was the 14th consecutive year that these competitions were held. While there was a slight decline in overall butter quality in Ontario, the 81 creameries participating showed an overall improvement. These creameries made 98.1% first grade butter compared with 94.7% made by non-participating creameries and 97.4% by all creameries.

These competitions are sponsored by The Ontario Creamerymen's Association, The Ontario Cream Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board and the dairy equipment and supply companies in the province.

The competitions are supervised by the Milk Products Division of the Dairy Branch in co-operation with the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division, Marketing and Production Services, Canada Department of Agriculture.

The Grand and Reserve Champions in each of the competitions in 1958 were:

##### 1. QUALITY:

The Borden Company Limited, Belmont  
The Borden Company Limited, Kemptville



2. YEAST AND MOULD:  
Malcolm Condensing Company Limited, St. George  
Canada Packers Limited, Harriston
3. WORKMANSHIP (COMPOSITION CONTROL):  
Canada Packers Limited, Chesley  
Villa Nova Milk Products Co-operative, Waterford
4. COMBINED QUALITY, YEAST AND MOULD, AND WORKMANSHIP:  
Canada Packers Limited, Harriston  
Malcolm Condensing Company Limited, St. George
5. CREAMERIES MAKING THE MOST OVERALL IMPROVEMENT:  
Briar's Dairy Limited, Lorneville  
Avonbank Cheese and Butter Company, St. Marys
6. NOVICE COMPETITION (NOT PREVIOUSLY A WINNER):  
Ault Creamery Limited, Winchester  
Tweed Creamery, Tweed
7. HIGHEST SCORING BUTTER (CREAM RECEIVING CREAMERIES):  
Canada Packers Limited, Fort Frances  
Palmerston Creamery, Palmerston
8. HIGHEST SCORING BUTTER (MILK RECEIVING CREAMERIES):  
The Borden Company Limited, Belmont  
The Borden Company Limited, Kemptville
9. GREATEST INCREASE IN HIGH SCORING BUTTER (CREAM RECEIVING CREAMERIES):  
Kimberley Co-operative Creamery, Kimberley  
Palmerston Creamery, Palmerston
10. GREATEST INCREASE IN HIGH SCORING BUTTER (MILK RECEIVING CREAMERIES):  
Ault Creamery Limited, Winchester  
The Borden Company Limited, Belmont
11. EXHIBITION BUTTER (CREAMERIES WINNING MOST PRIZES AT THE C.N.E. AND THE ROYAL):  
Briar's Dairy Limited, Sutton West  
Silverwood Dairies Limited, Caledonia

Ontario Creameries do not appear to be interested in exhibition butter. Only four competed at the C.N.E. and the Royal in 1958. The other competitive competition for butter was sponsored by the Dairymen's Association of Western Ontario and was held at Hamilton in January.

### Cheese Competitions and Exhibitions

Major competitive cheese exhibitions were held by the C.N.E., Royal Winter Fair, Ottawa Winter Fair, British Empire Cheese Show, Belleville, and The Dairymen's Association of Western Ontario.

Ontario cheesemakers again captured top honours at these exhibitions.

In addition, Ontario cheesemakers captured top honours in the open classes at the Olympia Dairy Show, London, England, and the Scottish Dairy Show, Glasgow,

Scotland. A creditable showing was also made in the World Championship Cheddar Cheese Class sponsored by the Wisconsin Cheesemakers' Association.

The major trophy winners in the provincial cheese competitions in 1958 were:

1. THE GARNET BAIN MEMORIAL TROPHY awarded to the Cheesemakers' Association whose members made the highest percentage of extraneous matter free cheese:  
Western Ontario Cheesemakers' Association
2. FRANK HERNS MEMORIAL TROPHY awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions:  
T. S. Aicken, Blanshard and Nissouri Cheese and Butter Manufacturing Company Limited, Belton
3. G. G. PUBLOW MEMORIAL TROPHY awarded to the cheesemaker with the highest rating for plant sanitation and operation:  
Douglas Rowe, Warkworth Cheese Factory, Warkworth
4. J. P. GRIFFIN MEMORIAL SHIELD awarded to the Cheesemakers' Association making the highest percentage of First Grade Cheese:  
Central Ontario Cheesemakers' Association

### General

Plants manufacturing milk products have continued to show improvement in equipment and construction.

Several of the most modern dairy plants were built during 1958. Several are in the process of remodelling or construction.

Wooden processing equipment is gradually becoming obsolete in the plants.

There is still a trend to larger plants with larger production per plant. The smaller plant is experiencing extreme difficulty in competing under present day conditions.

Qualified help is still a problem, particularly in the cheese industry. Very few younger men appear to be following this trade. It is hoped that with the development of newer methods of manufacture through labour saving devices that there will be an incentive for more men to take up the cheese manufacturing trade.

Considerable difficulty was experienced with cheese starters in 1958 in Eastern Ontario. A thorough study is now under way on this problem by the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division of the Kemptville Agricultural School.

Continuous process butter, now that the product has been perfected, continues to gain favour with consumers. Only three plants, as yet, are using this process of manufacture.

The sale of cartoned butter packaged in quarter pound sections appears to be gaining favour as is the use of pre-packaged butter patties for restaurant and hotel use.

Three cheese factories were closed during the year for unsatisfactory conditions and two others were required to make improvements before re-opening in 1959.

Open House was held by a few plants as part of a public relations programme. These were generally conducted jointly by the plant management, the local producers' association and the Dairy Branch fieldmen.

Producers generally are becoming more interested in the operation of the plants. This is resulting in better understanding and relationship between plant and producer.

Unfortunately, in the highly competitive areas, there is too much split patronage between plants on the part of the producers.

Several Cheesemakers' Clubs, Buttermakers' Clubs, Dairymen's Clubs and two Milk Sanitarians' Associations are in operation in the province. Producers and transporters are becoming interested in their activities with resultant improved public relations.

Many local fairs sponsor dairy exhibits and demonstrations. Dairy Branch fieldmen assist with many of these and act as judges where competitive classes are exhibited.

The first introduction of bulk haulage to the Milk Products Section was by a processing plant in Western Ontario which commenced operating two routes. A large cheese manufacturer in Eastern Ontario is planning to introduce bulk haulage to his producers during 1959.

#### Summary of Activities of Dairy Branch Fieldmen

	1957*	1958
Number of visits to plants .....	6,981	9,151
Number of cans of cream examined for quality .....	40,758	35,036
Number of cans of milk examined for quality .....	194,806	135,167
Number of cans of milk examined for sediment .....	71,476	60,892
Number of tests made on milk for bacterial activity .....	30,900	41,479
Number of fermentation tests made on cheese milk .....	6,494	7,148
Number of samples of milk tested for milk fat .....	11,154	39,311
Number of samples of cream tested for milk fat .....	14,185	11,410
Number of adjustments made .....	679	250*
Number of milk and cream cans examined for condition .....	98,664	97,131
Number of producers visited for quality, etc. ....	2,755	3,977
Number of meetings attended .....	731	874

\* 1957 figures refer to milk products plants only.

#### MILK QUALITY

Further emphasis was placed on milk quality during the past year. With the re-arranging of territories, each Area Fieldman had considerable increase in responsibilities among which, was becoming acquainted with his new territory. Our fieldmen again supervised the grading of milk carried out in processing plants. Some of the plants were found to be delinquent in taking regular sediment and bacterial activity tests as required by Regulation and if this practice continues measures will have to be taken to bring them into compliance.

Many cream producers started producing milk in place of cream this past year. due to the incentive provided by plants manufacturing powder. Inadequate cooling facilities and improper storage conditions were responsible for most of the poor milk producers.

Dairy Branch fieldmen visit all producers of poor quality milk and cream, as time permits. This work has been extended in order to assist producers in the production of quality milk.



The sediment test indicates the quality of milk in processing plants to be:

<i>Grade</i>	<i>%A</i>	<i>%B</i>	<i>%C (Warning)</i>	<i>%D (Reject)</i>
1958	41.9	44.8	10.8	2.5

The taking of Bacterial Activity tests was made mandatory after June 1st, 1957. Progress is being made in this work. Considerable time was taken up by fieldmen in teaching the fundamentals of the bacterial activity test to plant personnel.

Bacterial Activity grades reported by our fieldmen indicated the following for processing plants:

<i>Grade</i>	<i>%1</i>	<i>%2</i>	<i>%3</i>	<i>%4</i>
1958	21.7	23.9	23.5	30.7

### Milk Quality at Cheese Factories

Fieldmen supervising the grading of milk at cheese factories called on the producers of poor quality milk, where possible.

The Sediment test indicates the quality of our milk in cheese factories to be:

<i>Grade</i>	<i>%A</i>	<i>%B</i>	<i>%C</i>	<i>%D</i>
1958	35.7	49.2	12.2	2.9

An important part of the quality programme is to see that qualified graders are in charge of receiving milk at our milk plants. Flavor is still the most important characteristic of milk, and we can do a great deal to improve the quality of milk produced on our farms if we have qualified men grading the milk as it is received.

Written examinations for graders and testers were again held twice during the year, throughout the Province.

Total Certificates issued to date are:

	<i>1956</i>	<i>1957</i>	<i>1958</i>	<i>Total</i>
Milk Graders .....	390	105	112	608
Milk Testers .....	546	236	122	904
Cream Graders .....	287	85	42	415
Cream Testers .....	320	96	62	481
Bulk Tank Milk Graders .....	-----	-----	147	147

In addition to passing a written examination, all graders and testers are required to pass a practical examination, also. The milk grader's practical examinations were held in fieldmen's areas throughout the Province. These examinations pointed up the need for more practice in milk grading by those receiving milk.

No. of Centres where practical milk grading examinations held — 8

No. of Candidates participating — 264

Provincial regulations covering the production of milk on the farm and the quality of milk which could be sold by producers for fluid consumption in Ontario, were passed in 1957. Several fluid milk plants purchased bacterial activity testing equipment, and a start was made in introducing a quality milk programme in those areas which were not covered by municipal supervision.

Preliminary meetings were held with members of the Department of Health to discuss plans for supervising the production of fluid milk on the farms in Ontario by the Dairy Branch.

At the request of the Lincoln County Health Unit, the Dairy Branch took over the supervision of the production of fluid milk on the farms in this area, beginning July 1st, 1958.

No. of Dairies in Lincoln County .....	12
No. of samples checked for Bacterial Activity .....	1,637
No. of Grade I Producers .....	1,340
No. of Grade II Producers .....	158
No. of Grade III Producers .....	109
No. of Grade IV Producers .....	30
No. of Farm visits made in the interest of Quality Control .....	177
Farm visits made in the course of securing Farm Bulk Tank Milk Samples .....	479

Many producers in the fluid market are switching to bulk tank storage of milk, and assistance with plans and alterations for milk houses to accommodate bulk tanks was given by Dairy Branch fieldmen.

Three meetings were held with the Provincial Veterinarian, members of the Ontario Veterinary College and Department of Dairy Science, to investigate the possibilities of our fieldmen being of some assistance to producers in the control of Mastitis. Several Mastitis detection kits were distributed among our fieldmen on a trial basis. It was felt that our fieldmen could do important work in the control of Mastitis when visiting producers, by pointing out the importance of good herd management, good milking procedures and attention to the cleanliness and mechanical condition of milking machines. Further meetings will be held in the future.

The Dairy Queen competition takes up considerable time of our fieldmen but this competition demonstrates to producers and consumers, how quality milk is produced. Our fieldmen assist with coaching of participants and the fundamentals of quality milk production are demonstrated at the County level during competitions to select a Dairy Princess.

### Transportation of Milk and Cream

Dairy Branch Fieldmen were requested to inspect trucks transporting milk and cream to plants, as to their compliance with the Regulations. All trucks used to transport milk to plants will be required to have insulated van bodies by January 1st, 1960.

No. of milk trucks inspected .....	487
No. of trucks equipped with van bodies .....	224
No. of trucks not equipped with van bodies .....	263

### Cream Quality

It is gratifying to note that the percentage of second grade cream being produced is lower. The majority of creamery operators discourage the production of 2nd grade cream by paying 10¢ or less, per pound fat, for such cream, than is paid for 1st grade cream.

	% Special Grade	% First Grade	% Second Grade	% Reject Cream
1957	5.31	92.37	2.27	.05
1958	6.51	91.55	1.86	.08

## *Extension Branch*

The Extension Branch of the Ontario Department of Agriculture includes five services — The Agricultural Representative Service, the Home Economics Service, the Agricultural Engineering Extension Service, the Fruit and Vegetable Service and the Tobacco Extension Service.

The Agricultural Representative Service is the largest of the extension services, maintaining offices and personnel in each County and District in Ontario.

The Home Economics Service maintains a staff of Home Economists and Specialists working in every County and District of Ontario.

The Agricultural Engineering Extension Service has had the largest increase in personnel during the year as more farmers are availing themselves of services offered on drainage, farm machinery and buildings.

The Fruit and Vegetable Extension Service provides information and services in the main fruit and vegetable growing areas.

The Tobacco Extension Service was established in 1955, with only two specialists to assist with extension in the Tobacco growing areas of the Province.

### AGRICULTURAL REPRESENTATIVE SERVICE

The Agricultural Representative Service provided leadership, with programmes and projects, to further increase the opportunities of farm people to develop a more satisfactory economic and social life in rural Ontario.

Weather conditions varied greatly in the different sections of the Province. Dry weather was a major concern in Western Ontario where forage and pasture crops were greatly reduced but an excellent crop of grain was harvested. Rainfall was excessive in Eastern Ontario where a heavy crop of both hay and cereal grains were grown and harvested under difficult conditions. The conditions were considerably better in Southern Ontario and although prices declined during the past year, crop yields increased resulting in improved farm income.

There has been a continued trend toward larger, more highly specialized farm operations. This was clearly in evidence in dairying, poultry and hogs. Forty-two Agricultural Representatives reported contract farming was increasing especially in poultry and hogs where credit was necessary to establish larger farm operations. The continued increase in production costs and the lower prices for some farm products has created a larger demand on the Agricultural Representative for better farm management practices. To meet this demand two hundred and two special courses in Farm Business Management were held and different farm analysis were discussed. Thirty-six farm management associations are now organized in the Province with 899 members. A total of 523 farm accounts were analysed and better practices recommended. Agricultural Representatives also perform an individual service for farmers who request information on better farm business, but are not members of a farm business association.

### Ontario Farm Safety Conference

Farm safety has long been a problem. In the past, many meetings and demonstrations have focused attention on it, but never on a Province-wide basis.



The Ontario Farm Safety Conference in 1959 was the initial step in Province-wide action.

The conference was organized and sponsored jointly by the Ontario Department of Agriculture and the Ontario Department of Transport. Four rural delegates and one extension worker were invited from each County and District in Ontario. In addition, many provincial organizations and agencies nominated delegates. The two-day conference was attended by over 400 delegates. *Conference objective* — To bring together a selected group of public spirited farm people who are leaders in their respective communities, for the purpose of:

- (a) Focusing attention on the extreme urgency of the farm accident problem.
- (b) Mobilizing effective public support for farm accident prevention activities.
- (c) Encouraging organized rural groups to develop continuous and effective farm safety programmes.

*Theme* — How can Farm people live safely?

### Ontario Farm Accident Survey

In order to determine the seriousness of farm accidents, and how they are caused, a Provincial wide farm accident survey was organized. This survey commenced throughout Ontario, March 1st, 1959, and will record all accidents to farm people both on and off the farm during the twelve month period concluding February 29th, 1960. Over 5,000 reporters were supplied with the forms and volunteered to report all accidents. Statistics on this survey will be made available to every County and District, so that farm people in a county wishing to initiate a safety education programme designed around the county's accident rate will be able to work with the knowledge of the type and number of accidents.

### Extension Work in Live Stock Improvement

The Agricultural Representative spent considerable time promoting live stock improvement through the different policies of the Department of Agriculture. The Agricultural Representative had petitions signed by farmers in their respective county to become Brucellosis Control areas. Meetings were held to familiarize farmers with the regulations and emphasized the importance of keeping our cattle export market.

- (a) The following counties have been declared Certified — Brucellosis free areas: Oxford, Prince Edward, Halton, Grenville, Dundas and Stormont.
- (b) Tests are being conducted at present in the following counties: Brant, Carleton, Elgin, Frontenac, Glengarry, Hastings, Leeds, Lennox & Addington, Peel and York.
- (c) The following counties or districts have been designated Brucellosis Control areas or are in the process of receiving that designation: Essex, Middlesex, Norfolk, Haldimand, Welland, Lincoln, Wentworth, Waterloo, Dufferin, Ontario, Durham, Victoria, Peterborough, Northumberland, Prescott, Russell, Lanark, Manitoulin, and Rainy River.
- (d) Petitions are being circulated in 9 counties and districts at the present time.

Artificial Insemination continued to expand and plays an important part in live stock improvement. The Agricultural Representative works very closely with the different units and a large number of these calves are used in 4-H Club Work.

Fifty-nine Dairy Herd Improvement Associations were active in 1958. The Agricultural Representative assists these local organizations and helps co-ordinate this programme with the over-all farm operations. Meetings were held in every County and District to interpret the records from these associations.



### Service Clubs

The Agricultural Representative works closely with service clubs in promoting good understanding between rural and urban people and considerable assistance is being given to encourage 4-H Club members. Some 187 service clubs contributed \$29,703.70 to 4-H Clubs as prize money, banquets, tours or scholarships. The majority of the Agricultural Representatives are members of the various service clubs and are usually active on the Agricultural Committee.

### Plowing Matches

A total of 56 senior plowing matches and 14 junior matches were held in 34 counties. The Agricultural Representative co-operates in several counties by organizing machinery displays or drainage demonstrations in conjunction with these matches.

### Rural Community Night Schools

30 Rural Community Night Schools were held in 27 counties sponsored jointly by the Department of Agriculture and the Department of Education. These courses provide information on a wide range of subjects for farm families.

### Extension Work Through Press, Radio and Television

Some of the Agricultural Representatives contribute a column to the county weekly papers and 4,852 press releases were supplied to weekly and daily papers. These releases give timely information on agricultural topics designed to meet the needs of the community.

Most of the Agricultural Representatives have a regular weekly radio broadcast giving information and observations on live stock, crops and the various farm organizations. Some 2,298 radio broadcasts were presented by members of the extension staff.

Extension personnel also presented or assisted with 134 telecasts.

### 4-H CLUB PROGRAMME

In 1958, a total of 22,941 young people were enrolled in this programme in Ontario. Each of these young people, who range in age from 12 to 20 years, carried on an active project located on the home farm. The Agricultural Representative Service takes the major responsibility for the direction and management of 4-H Agricultural Club Work in Ontario, and pays one-third of the prize money to Club members. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service. Following is a summary of the 4-H Clubs organized in 1958.

<i>Agricultural Clubs</i>	<i>No. Clubs</i>	<i>Membership</i>
4-H Calf Clubs .....	326	5,895
4-H Swine Clubs .....	55	774
4-H Sheep Clubs .....	5	71
4-H Poultry Clubs .....	18	289
4-H Grain Clubs .....	83	1,239
4-H Field Crop Clubs .....	51	806
4-H Potato Clubs .....	72	1,177
4-H Tractor Clubs .....	47	763



4-H Forestry Clubs .....	24	479
Miscellaneous 4-H Clubs .....	14	212
	<hr/>	<hr/>
	695	11,705

*Homemaking Clubs*

4-H Clothing Clubs .....	435	3,695
4-H Food and Nutrition Clubs .....	450	4,226
4-H Garden Clubs .....	118	801
4-H Housefurnishing Clubs .....	118	966
4-H Hospitality Clubs .....	65	658
4-H Defence Clubs .....	89	890
	<hr/>	<hr/>
	1,275	11,236

**Voluntary Leadership**

With the ever-increasing membership in 4-H Club Work in Ontario, the work of the Voluntary Club Leader in assisting the Agricultural Representative with this work has become increasingly important. Last year there were about 1,200 Leaders working on a voluntary basis in the various counties, assisting in many ways in the promotion of Club Work.

In many of the counties, the work of the Club Leaders is co-ordinated by a Club Leaders' Council. The Department of Agriculture provides an opportunity for Club Leaders to meet in the various counties to plan programmes and to evaluate the results of the work being carried on. A special short course for 4-H Club Leaders is provided during Short Course Week at the Ontario Agricultural College, early in the New Year.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip to the Royal Winter Fair. A complimentary trip was also provided to the Ontario Soil and Crop Improvement Association Convention for those Club Leaders who did not wish to attend the Royal Winter Fair.

**Wm. H. Danforth Leadership Training Scholarship**

This scholarship was initiated in Ontario in 1958. The Scholarship is awarded to one 4-H boy and one 4-H girl, and provides two weeks of intensive training at the American Youth Foundation Leadership Training Camp, Stone Lake, Oceana County, Michigan, U.S.A. Last year the scholarships were awarded to:

Miss Barbara Dick, R.R. #2, Bloomfield, Prince Edward County.

Mr. Grant Ketcheson, R.R. #1, Madoc, Hastings County.

**4-H Inter-Club Competitions, New Liskeard**

The fifth Annual 4-H Inter-Club Competitions were held for Northeastern Ontario, at the Demonstration Farm, New Liskeard, on October 3rd, for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were 86 boys and girls in 43 teams taking part in agricultural club projects. The winners were:

<i>Project</i>	<i>Teams Com- peting</i>	<i>Winning Team Members</i>	<i>District</i>	<i>Coach</i>
Dairy Calf	17	Maurice Rainville, Verner Aurel Tellier, Verner	Nipissing	F. J. Millette

Beef Calf	9	Edward Legge, Providence Bay John Love, Mindemoye	Manitoulin	E. R. Jennings
Potato	13	Marie Jean Belanger, Chelmsford #1 Georgette Demers, Chelmsford #1	Sudbury	R. Leroux
Forestry	4	Mary Lou Martindale, Cane Norma Schubert, New Liskeard #1	Temiskaming	M. F. Cook Don Scott, Reforestation Supervisor

#### 4-H Inter-Club Competitions, Guelph

The 4-H Inter-Club Competitions for provincial honours were held at the Ontario Agricultural College, Guelph, on October 17th, 1958, with 482 boys and girls in 241 teams taking part in agricultural club projects.

<i>Project</i>	<i>Teams Com- peting</i>	<i>Winning Team Members</i>	<i>County</i>	<i>Coach</i>
Dairy Calf	55	Barbara Mann, Peterborough #4 John Allen, Douro #1	Peterborough	F. C. Paterson H. G. Norry
Beef Calf	38	Larry Campbell, Ilderton #2	Middlesex	W. K. Riddell C. L. Hamilton
Swine	26	Donald Henry, Listowel #2 Lloyd Karges, Gowanstown	Perth	R. E. White B. L. McCorquodale
Poultry	7	Keith Fish, Elginburg #1 George Sands, Kingston #5	Frontenac	D. A. McArthur
Grain	40	Donald Miller, Almonte #2 Marilyn Robertson, Box 255, Almonte	Lanark	A. G. Grubbe H. J. Stanley
Field Crops	16	John Sheppard, Scotland #2 Glenn Powell, Paris #3	Brant	D. N. Graham
Potato	17	Mary Kennedy, Ilderton #4 Ken Loft, Ilderton #4	Middlesex	W. K. Riddell C. L. Hamilton
Forestry	8	Bev Kay, Cameron #1 Bill Hoyle, Woodsville #3	Victoria	LeRoy G. Brown H. Ivan Bell
Tractor Maintenance	34	George Kidd, Chatsworth #4 Jack Hill, Owen Sound #4	Grey	T. S. Cooper G. W. Sweiger H. E. Bellman, Engineering Specialist

On Saturday, October 18th, an educational tour of the Ontario Agricultural College was provided during the morning for those contestants who wished to participate.

#### Canadian Council on 4-H Clubs

This organization is set up for the primary purpose of co-ordinating and co-relating the various provincial 4-H Club programmes across Canada. The organization is composed of representatives from the Canada Department of Agriculture as well as from the ten Provincial Departments of Agriculture, together with 38 industrial members and 12 Associate members who represent various national agricultural organizations.

K. E. Lantz, Associate Director of Extension in charge of 4-H Club Work in Ontario, serves as a Provincial Director on the Council.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300.00 to the Council.

### National 4-H Club Week

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

Ontario sent 14 delegates to National Club Week. Five of the delegation were selected from 4-H Homemaking Clubs and nine from 4-H Agricultural Clubs. Those selected were as follows:

#### *4-H Homemaking Club Delegates:*

Ruby Scheel, R.R. #2, Arnprior (Renfrew)  
Lois Lennon, Puslinch (Wentworth)  
Joan Marie Aikins, Creemore #2 (South Simcoe)  
Barbara Murray, Holyrood #1 (Bruce)  
Jean Baker, Moscow #2 (Lennox & Addington)

#### *4-H Agricultural Club Delegates:*

Paul Rowe, Ice Lake (Manitoulin)  
Grant Richardson, Dunnville #4 (Haldimand)  
Maurice Francis, Shelburne #4 (Dufferin)  
John Burton, Vars (Russell)  
Eddy den Haan, Loretto #2 (South Simcoe)  
Kenneth Moore, Waterford #4 (Norfolk)  
Francis Doris, Peterborough #8 (Peterborough)  
Donald Hemingway, Brussels #3 (Huron)  
David Reid, Renfrew #2 (Renfrew)

### JUNIOR PROGRAMMES AT CLASS "A" EXHIBITIONS

#### Central Canada Exhibition, Ottawa

There were 115 teams competing on August 26th, 1958, in the General Agricultural Competition, represented by 326 Club members.

A Club Camp was held in connection with this Competition. Camp members spent a day at the Experimental Farm, were entertained at a friendship party and taken on a sight-seeing tour around Ottawa. There were some 500 boys and girls attending this camp.

A special feature of the camp was a parade to the grandstand by counties.

#### Peterborough Exhibition

A total of 88 boys and girls took part in the Junior Agricultural Programme at Peterborough Exhibition on August 6th, 1958.

The programme included Live Stock Judging Competitions, an Agricultural Quiz and an Identification and Machinery Defects Test. In the evening the juniors were guests of Canada Packers at a dinner and were guests of the Exhibition at the evening grandstand performance.

#### Canadian National Exhibition, Toronto

There were 186 contestants taking part in the Live Stock Judging Competitions, 101 contestants taking part in the Fruit and Vegetable, Grain and Roots and Farm



Machinery Test Competitions, and 12 in the Tractor Safe Driving Competition, on Wednesday, September 3rd, 1958.

The boys and girls taking part in these competitions were provided with an evening meal, a pass to the grounds and a ticket to the evening grandstand performance through the courtesy of the Canadian National Exhibition Association.

#### Western Fair, London

There were 210 boys and girls taking part in the Junior Agricultural Programme at Western Fair, on September 8th, 1958.

In addition to the live stock judging competitions, the programme included a conducted tour of various educational exhibits at the Fair as well as an Agricultural Identification Quiz. Each contestant was required to answer a series of questions based on what was seen during the tour of the Exhibition. The contestants were served dinner through the courtesy of the Western Fair Association and were also their guests at the evening grandstand performance.

#### INTER-COUNTY LIVE STOCK JUDGING COMPETITIONS

##### Royal Winter Fair, Toronto, November 13th, 1958

Nineteen teams were entered, comprised of three contestants per team.

JEFFREY BULL MEMORIAL TROPHY—Won by Peterborough County.

Winning Team Members—Wm. Chamberlain, Peterborough #7.

Francis Doris, Peterborough #8.

Grant Elmhirst, Indian River #1.

Coaches: F. C. Paterson, Agricultural Representative.

H. G. Norry, Associate Agricultural Representative.

##### ONTARIO VETERINARY CHALLENGE TROPHIES.

*Dairy Cattle*—Won by: Oxford County.

Gordon Wilford, Salford #1.

Clifford Haycock, Mt. Elgin.

Bruce Burrill, Burgessville.

*Beef Cattle*—Won by: Peterborough County.

Wm. Chamberlain, Peterborough #7.

Francis Doris, Peterborough #8.

Grant Elmhirst, Indian River #1.

*Swine*—Won by: Peel County.

John Rayburn, Orangeville #6.

Murray Mellow, Bolton #1.

Earl Speirs, Caledon #3.

##### ROBERT GRAHAM MEMORIAL TROPHY—9 entries.

Won by: R. Prestage, Ontario Agricultural College.

##### E. H. STONEHOUSE MEMORIAL TROPHY.

Won by: Sandy Snedden, Almonte #3, Lanark County.

##### E. A. SUMMERS MEMORIAL TROPHY—57 entries.

Won by: Grant Elmhirst, Indian River #1, Peterborough County.

##### F. K. MORROW SCHOLARSHIP AWARD—23 entries.

Won by: Grant Elmhirst, Indian River #1, Peterborough County.

*Gold Medals* were awarded to the top contestant in each of the breeds of live stock judged.

**Ottawa Winter Fair, Ottawa, October 28th, 1958**

Six counties were entered represented by 23 contestants.

**OTTAWA WINTER FAIR TROPHY**—Won by: Carleton County.

Winning Team Members—David Wilson, Pakenham #4.

Arthur Higginson, Kinburn.

Delmer Cavanagh, Kinburn.

Coaches: W. M. Croskery, Agricultural Representative.

Rodger A. Thompson, Assistant Agricultural Representative.

*Silver Medals* were presented to top contestants in each of the breeds of live stock judged.

**INTER-AGRICULTURAL SCHOOL LIVE STOCK JUDGING COMPETITION****Royal Winter Fair, Toronto, November 13th, 1958**

This competition is open to teams consisting of 4 students enrolled in the second year of a Diploma Course at an Agricultural School, College or University.

Three teams entered, comprised of 4 contestants per team.

Won by: Western Ontario Agricultural School.

Winning Team Members: Norman Smibert.

Herbert Verbeek.

Charles O'Shea.

Basil Simpson.

Coached by: J. W. Underwood, Dean of Men,

Western Ontario Agricultural School, Ridgetown.

**INTER-COUNTY SEED JUDGING COMPETITIONS****Ottawa Winter Fair, Ottawa, October 29th, 1958**

Five counties were entered represented by 20 contestants.

**NESTLETON CHALLENGE TROPHY**—Won by: Lanark County.

Coached by: A. G. Grubbe, Agricultural Representative.

Henry J. Stanley, Assistant Agricultural Representative.

**Central Ontario Spring Show**

Won by: Peterborough County.

Coached by: F. C. Paterson, Agricultural Representative.

H. G. Norry, Associate Agricultural Representative.

**Ottawa Valley Seed Fair**

Won by: Renfrew County.

Coached by: F. Q. Dench.

**JUNIOR FAIRS****4-H Calf and Swine Club Championship Show, Ottawa**

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Departments of Agriculture, staged the Eastern Ontario 4-H

Calf and Swine Club Championship Show during the Ottawa Winter Fair, on October 31st, 1958.

Fourteen counties from Hastings, Prince Edward and East, exhibited at this Show.

#### Queen's Guineas Class, Royal Winter Fair, Toronto

225 4-H Club members entered baby beef calves in this class at the Royal Winter Fair, on Thursday, November 20th, 1958.

The Aberdeen-Angus steer shown by James Wettlaufer, R.R. #2, Baden, was made Grand Champion of this Class and the Queen's Guineas and the Hon. T. L. Kennedy Trophy were presented by The Honourable Keiller Mackay, Lieutenant-Governor of Ontario, and Dr. C. D. Graham, Deputy Minister of Agriculture, respectively. Following is a summary of this class:

<i>Entries</i>	
Shorthorn .....	86
Aberdeen-Angus .....	90
Hereford .....	49
Total .....	225

#### FIRST PRIZE CALF IN EACH CLASS

Shorthorn — Carolyn Gardhouse, R.R. #5, Milton.

Aberdeen-Angus — James Wettlaufer, R.R. #2, Baden.

Hereford — William Lyons, R.R. #1, Wallacetown.

#### WINNER OF QUEEN'S GUINEAS — \$250.00

James Wettlaufer, R.R. #2, Baden.

Weight of calf — 678 lbs.

Sale price — \$2.00 per lb.

#### RESERVE CHAMPION (Aberdeen Angus)

Peter Vander Post, King Haven Farms, R.R. #2, King.

Weight of calf — 860 lbs.

Sale price — 50¢ per lb.

AVERAGE SALE PRICE PER LB. OF CALVES exclusive of Champion and Reserve Champion — 33.8¢ per lb.

#### JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the programme of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment", offer a programme to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension personnel.

#### Junior Farmers' Association of Ontario

The office of Secretary-Treasurer of the Association is held by the Assistant Director of the Branch and for that reason the work of the Branch is closely associated with Junior Farmer work throughout Ontario.



### Membership

6,701 members representing 232 Junior Farmer and Junior Institute clubs affiliated with the Provincial Association in 1958-59. Since the 1957-58 membership was 6,345, there has been a slight increase in membership.

### PROJECTS

#### Public Speaking and Debating

The Provincial Public Speaking Competition attracted 27 participants representing many local and county competitions throughout the Province.

The one hundred dollar educational scholarship offered by the Association to the high ranking contestant was awarded to Howard Herrle, Waterloo County. Four contestants receiving honourable mention were: Sandra Doig, Huron; Doreen Garrett, Middlesex; Walter Mulkewich, Norfolk; and Jane Newman, Haldimand.

Twenty-three counties made entries and competed in the preliminary round of the Provincial Debating Competition. The topics used are as follows:

Rounds 1 and 2 — Resolved that rural youth in Ontario is being adequately trained for modern agriculture.

Rounds 3 and 4 and Finals — Resolved that current price spreads of Canadian food products are justified.

The debating competition provides much information for the participants and audiences and also affords an excellent opportunity for training in public speaking.

#### Choirs, Quartets and Trios

Dr. Leslie R. Bell and Mr. C. L. Bird, adjudicators for the music events held at the time of the Toronto Conference on January 10th, commended all participants for their interest in music. A large crowd enjoyed quality singing and excellent adjudicating.

Ontario County won the mixed quartet competition; South Simcoe, the ladies' trio competition; and Victoria County the male quartet competition.

A non-competitive choir festival attracted choirs from the counties of Middlesex, Huron, Wellington, South Simcoe and Ontario.

#### Leadership Training Schools

Five one-day Junior Farmer leadership training schools were planned and conducted by county directors on a district basis. Four schools were well attended and provided an opportunity for much valuable discussion and exchange of ideas. The fifth was postponed because of snow-filled roads and held at a later date.

#### Conferences

The Junior Farmer Conference held in January in Toronto had a registration of 777 and the one-day conference for Junior Farmers in Eastern Ontario held at Kemptville was well attended. Highlights of the Toronto Conference were the music and public speaking competitions and a highlight of the Kemptville Conference was an address by Prof. Isabel Laird, Dept. of Psychology, Queen's University, Kingston.

The Provincial President, Kay Homan, Hastings County, assisted with the annual 4-H conference at New Liskeard.

### Television

TV competitions were held at Wingham, Barrie, London and Kingston and the following counties received prize money in these four competitions: *Wingham* — Grey, Bruce, Huron, Perth, Wellington, Dufferin; *Barrie* — York, Ontario, North Simcoe, South Simcoe; *London* — Kent, Elgin, Brant, Lambton, Waterloo, Norfolk; *Kingston* — Hastings, Prince Edward, Frontenac, Leeds.

All competitions were organized by county directors with full co-operation of the local Television stations. This project does much to keep the Junior Farmer organization in the public eye and at the same time gives valuable experience to participants and extends much agricultural information to a large number of viewers.

### O.F.A. Prince and Princess Competition

Junior Farmers co-operated with the Ontario Federation of Agriculture in organizing and conducting local, regional and provincial competitions to select a provincial Federation of Agriculture Prince and Princess. The ultimate winners were Mary Hinan, Peterborough County, and Alan Murray, Haldimand County, who received an expenses-paid trip to the Canadian Federation of Agriculture Annual Meeting in Saskatoon, Sask.

### Sports

Again, much athletic talent was displayed at the four regional Field Days held at Guelph, Ridgetown, Peterborough and Kemptville. The field days were organized by county directors in the zones concerned.

A provincial Curling Bonspiel was held at Barrie with 27 rinks participating. A Waterloo County rink composed of George Mitchell, Bob Mitchell, Tom Wright and skipped by George Barrie won the Bonspiel. Copaco of Barrie tendered a complimentary banquet to all participants.

### Safe Driving Project

As a result of a suggestion from South Simcoe Junior Farmers a safe driving project was commenced this year. A lengthy questionnaire covering many facets of highway safety and including the safe movement of machinery on highways was developed. Copies of this questionnaire along with one copy of the answers and a list of safety films has been made available when requested by local or county clubs. Quite a number of clubs have used these aids to develop an excellent safety meeting.

### Animal Health Short Course

While the number of young men who attended the Animal Health Short Course was reduced somewhat this year, the course itself was very well received by those in attendance. Dr. Wm. Mitchell of the Ontario Veterinary College has advised that a similar course will be offered next year.

### TRAVELLING SCHOLARSHIPS

Travelling scholarships continue to provide memorable experiences for Junior Farmers. Following are names of Ontario Juniors who were awarded travelling scholarships this year and names of Juniors who visited Ontario:

Four young people — Miss Ruth Deviney, Northumberland; Miss Kathleen Homan, Hastings; Angus Campbell, Elgin; Allan McIntosh, Lanark; under the leadership of Rev. W. A. Young, Ontario Agricultural College, Guelph, visited Great Britain and Northern Ireland.

Four Scottish, two Irish and four English Young Farmers visited in Ontario during the 1958 summer months. These were: Dorothy A. Murray, Elizabeth A. McKerrow, Stewart F. Buchan, Roy Will, from Scotland; Margaret A. Boomer and Hugh K. Hamill from Northern Ireland; and Lysbeth Jones, Anna Elliott, Derek Heath and Charles Bailey from England and Wales.

In addition, two young men from the Province of Manitoba, Ivan Jeffries and Reinhold Holinski, visited for a two-week period in Ontario.

Four young people represented the Junior Farmers' Association of Ontario at the R.Y.U.S.A. Conference in Colorado in September: Miriam McMann, South Simcoe; Betty Opersko, Norfolk; Ted Lamb, Ontario; and Ross Tedford, Kent.

Viola Branton, Middlesex; Margaret Parliament, Prince Edward; Don Karn, Oxford; Walter Clark, Peterborough, attended the New England Young Men and Young Women's Conference in Massachusetts in October.

Mr. Boyd Taylor, Huron County, attended the Annual Meeting of the American Institute of Co-operation in Pennsylvania in August. U.C.O. sponsored Vice-President Jim Needham to this same Conference.

Miss Madeline Schaaf, Waterloo; and Don McCutcheon, Dufferin; visited the Province of Alberta in June and attended the annual Farm Young People's week in Edmonton.

Audrey Dobson, Lambton; John Scott, Manitoulin; and Wray Marshall, Wentworth, attended the Tri-State Conference held at Pocono Manor in Pennsylvania in April.

Angus Campbell, Elgin, and Kay Homan attended the Provincial Rural Leadership Forum at Vineland in February, as representatives of the Junior Farmers' Association of Ontario.

### Provincial Leadership Training Camp

The secretary of the Association annually directs the Junior Farmer Provincial Leadership Training Camp at Geneva Park, Lake Couchiching in September. Sixty-nine campers were in attendance in 1958. It was a most enthusiastic camp. This camp is subsidized quite extensively by the Ontario Department of Agriculture. However, one needs only to watch the competence of former campers in their various leadership roles to be convinced of the worth of "Provincial Camp".

### Soils and Land Use Tour

A three-day Junior Farmer Soils and Land Use Tour for one young man from each county and district was organized again this year by Prof. N. R. Richards, Head, Department of Soils, and A. G. Bennett, Assistant Director. With the co-operation of the Agricultural Representatives in Waterloo, Wellington, Brant, Haldimand and Lincoln, an excellent educational tour was arranged through these counties. Thirty-one delegates participated.



**Affiliations**

The Association is affiliated with and nominates representatives to other farm organizations and associations in Ontario. These are:

*Federated Women's Institutes of Ontario* — Audrey Dobson, Corunna, and Janet Laidlaw, Brampton.

*Royal Agricultural Winter Fair* — Bev Gray, R.R. #1, Port Hope; Elliott Snyder, R.R. #1, Brampton.

*Canadian National Exhibition* — Ron Werry, R.R. #1, Oshawa.

*Ontario Plowmen's Association* — Ross Sibbick, R.R. #2, Burford; Donald Henry, Berwick.

*Ontario Federation of Agriculture* — Keith Richardson, Dunnville; Mac Sprowl, R.R. #4, Acton; Ken Ferguson, R.R. #7, Alvinston; Jim Montgomery, Shelburne; Russell McAllister, Smiths Falls; George Barrie, R.R. #7, Galt.

**OFFICE STATISTICS****54 Agricultural Representatives' Offices**

	<i>Total</i>	<i>Average per Office</i>
No. Letters Received .....	158,191	2,929
No. Letters Written .....	119,817	2,219
No. Circular Letters Mailed .....	790,576	14,640
No. Incoming Telephone Calls .....	119,220	2,208
No. Visitors at Office .....	112,383	2,081
No. Meetings held in Office .....	4,645	86
No. Bulletins and Reports Distributed .....	162,687	3,012
No. Kodachrome Pictures taken .....	3,124	58
No. Meetings Attended by Agricultural Representative .....	6,485	120
No. Meetings Attended by Associate and Assistant Agricultural Representatives .....	4,653	86
No. Miles travelled by Car on Government Business by Agricultural Representatives .....	811,247	15,023
No. Miles travelled by Car on Government Business by Associate and Assistant Agricultural Representatives .....	619,714	11,476

**HOME ECONOMICS SERVICE**

The objectives of the Home Economics Service are (1) to bring to the women and girls of rural Ontario a programme of practical home economics education which they can apply directly in their responsibilities as homemakers, (2) to encourage them to help themselves, and to develop their own leadership.

**Local Leader Training Schools**

The local leader training schools introduced two years ago have continued to bring an increasing number of women into participation in our extension programme.

At the same time local leaders have been developed and original ideas and resourcefulness have been stimulated in both leaders and members. Interest and attendance at short courses have been most satisfactory.

In the programme of extension services offered this year some new features are being introduced. It is felt that in these days of rapid change in the home as everywhere else, a home economics programme must keep up-to-date with the new trends in its field. It is also just as important to hold onto the old standards and skills that are basic in homemaking at any time. In maintaining a strong programme in such fundamentals as food and clothing, it is the intention to bring to the people the latest authentic information on nutrition and textiles as well as the most progressive methods of cooking and sewing.

For some time it has been the policy to allow an organization to have only one course in a year. This year where a group of women are so anxious to have a second course and are ready to make the necessary arrangements, the extra service will be given where possible.

<i>Projects</i>	<i>Training Schools for Leaders</i>	<i>Groups Represented</i>	<i>Women Taking Project</i>
The Third Meal .....	24	185	1,694
Sew to Save .....	23	277	2,442
New Lamps for Old .....	11	89	652
Rug Making .....	16	115	1,160
Hints for the Home Nurse ....	5	44	1,266
Totals .....	79	710	7,214

### Courses and Conferences

Courses and Conferences ranging in length from one to five days were given by the field staff. The classes were mostly organized by the local Women's Institutes but were open to all the women of the community. The courses dealt with Food and Nutrition, Clothing and Textiles, Home Furnishings, Home Crafts, Health Education, Cultural Activities and Women's Institute Procedures. The accompanying tabulated summary gives the subjects of the courses in each of these sections, the number of courses and the attendance.

<i>Subject</i>	<i>Number of Courses</i>	<i>Enrolment</i>	<i>Average Attendance</i>
Choosing and Using Fabrics .....	21	386	19
Something to Wear .....	28	588	21
Dress Finishes .....	9	122	14
Dressmaking .....	3	38	9
Children's Clothing .....	—	—	—
Millinery .....	122	1,584	12
Hospitality Foods .....	40	1,694	26
Meals and Money .....	4	169	28
Modern Methods of Food Preservation	20	347	17
Salads .....	48	1,273	27
When Food Makes a Difference .....	19	345	18
Home Care of the Sick .....	13	566	15
Medicine—Yesterday and Today .....	1	30	30
An Ounce of Prevention .....	4	153	19
Textile Printing .....	1	7	7
Needlecraft .....	2	16	7
Leathercraft .....	2	27	17

Quilts and Quilting .....	—	—	—
Brighten Your Home With Colour .....	18	441	25
Treasures in Your Attic .....	4	68	17
Tailored Slip Covers .....	5	37	8
Curtains and Draperies .....	4	49	12
Cultural Activities .....	20	358	18
What Makes a Good Officer .....	8	124	15
Aids to Effective Speaking .....	8	145	18
How to Conduct Meetings .....	12	221	18
Programme Planning .....	29	422	14
Tweedsmuir History Workshops .....	62	1,335	21
Totals .....	507	10,545	

### Miscellaneous Meetings

Special addresses and demonstrations have been given in co-operation with the Agricultural Representatives and various branches of the Department of Agriculture such as Field Crops, the Dairy Branch and Agricultural Societies. Staff members gave special talks and demonstrations at Women's Institute Conventions, Conferences and Holidays and represented the Home Economics Service at the 109 District Annual Meetings of the Women's Institutes of the province.

A number of radio addresses were given on Home Economics subjects and releases were prepared for the press and radio. Both County Home Economists and Specialists on the staff have taken part in television programmes. Numbers of tape-recordings were made in co-operation with the Information Service.

### Circulars and Bulletins

Bulletins issued by this Branch are in great demand by Women's Institute members and others who get them from the office of the Agricultural Representatives. A great many requests are received from High School Teachers and Medical Health Officers.

### Home and Country

Home Economics Service takes full responsibility for the publication of the Women's Institute paper, "Home and Country". The purpose of this publication is to encourage good programmes, policies and projects in the Institutes and to keep the Institute members informed about our extension service. Three issues, each running to 47,000 copies were published this year, the branch Institutes distributing copies to their individual members and several copies going to key people in other provinces.

### Mimeographing

Material to be used in courses and 4-H Homemaking Club work was mimeographed in the office as follows: Administration 20,985; Clothing 10,185; Cultural Activities 2,135; Health Education 505; Housing 1,900; Loan Library 1,160; Nutrition 1,860; 4-H Homemaking Clubs 66,465.

In addition 87,685 pieces of mimeographing were done for the Federated Women's Institutes of Ontario.

### The Loan Library

The Loan Library is a mailing service providing source material for the programmes of Women's Institutes or other organizations. It also helps women with



homemaking problems. The loan material is sent upon request in the form of mounted bulletins, papers, clippings and study kits.

During the past year 17,014 folders were sent out on loan for a period of two weeks. The following classification indicates the interests: Agriculture and Canadian Industries 2,177; Citizenship and Education 2,712; Community Activities and Public Relations 788; Historical Research and Current Events 1,157; Home Economics and Health 3,454; Women's Institutes 4,374; Resolutions 78; articles were sent on inspirational subjects, biographies, other countries, games and contests totalling 4,186. Letters accompanied the 2,332 requests for loan literature.

Loan Library Study Kits are designed for those Institutes or individuals who desire longer loan periods for extensive study. These relate to culture, crafts and homemaking. Last year 173 study kits with accompanying letters were mailed. The distribution was as follows: Felt Work 24; Millinery 52; Etched Aluminum 19; Homecraft slides 5; Living with Crafts 5; Furniture Refinishing 18; Kitchen Improvement 10; Simplified Housekeeping 9; Household Linens 5; Canadian Women 5; Canadian Art and Artists 15; Conservation 2; Associated Country Women of the World 4.

A special appeal was sent out for letter friends in response to a letter from the Letter Friend Secretary of the Associated Country Women of the World. Applications received were as follows: England 325; Wales 142 and the United States of America 187. In addition 10 letter friends were formed with other countries. Friendship Links were completed between Ontario Institutes and 4 Institutes in Australia and 5 in England.

Letters for information on Historical Records of the organization of branch Institutes were answered.

Files are kept up-to-date by addition of new material and mending and discarding old material.

New magazine racks were installed which facilitate display and storage of a wide selection of current publications and periodicals. New book cases were added for centralization and classification of reference books. Staff members have access to these for source material.

## EXTENSION WORK WITH JUNIORS

### County and District Home Economists

Home economics extension work is directed in the field by County or District Home Economists. Twenty-three full time Home Economists were engaged in this work this year and every county or district in the province had the service, though in some areas the Home Economist had to divide her time among three or even four counties or districts.

### 4-H Homemaking Clubs

The 4-H Homemaking Club Programme for girls and young women, twelve to twenty-six years of age, is planned to give training in home economics, to provide an opportunity for continuous growth and development through participation in educational programmes, to encourage satisfaction in achievement and an appreciation of rural living, to develop leaders and to promote intelligent, responsible citizenship.

The County and District Home Economists direct the Homemaking Club Programme in their respective territories. They conduct local leader training schools,

visit clubs, hold achievement days and assume responsibility for special club programmes at fairs, conventions and conferences. Over 1,650 local leaders and assistant leaders attended two-day training schools, or one day for gardens and led the clubs with their eight club meetings, or four for gardens. Each County and District selected their club programme from the seventeen available clubs—five in foods, five in clothing, two in house furnishings, one in hospitality, one in home defence and three in gardens. Every County and District carried on two club units during the club year. Records show an all-time high membership with a gratifying standard of work. Reports indicate that interest of senior club members was maintained in spite of busy school days and girls leaving home for further studies and work. Frequently meetings were held at week-ends when girls were home or they joined clubs in other centres where they were working. Here and there young mothers of club age continued their membership since they find club experience assists them in meeting family needs. It is gratifying to find that senior girls in clubs very often take an interest in helping junior members, thereby also helping the leaders and assisting in the work in general.

4-H Homemaking Clubs are encouraged to confine their club activities to club meetings, a visit to the local Institute and participation in Club A and B Fair programmes for senior members. This seems wise since both leaders, and members who are mainly students at school have demands on their time and other opportunities for various social affairs. Some counties sponsor one educational trip a year during Easter or Summer holidays.

<i>Units</i>	<i>Training Schools for Leaders</i>	<i>Number of Clubs</i>	<i>Number of Members</i>
Food and Nutrition Clubs .....	42	406	3,847
Clothing Clubs .....	53	511	4,387
Housefurnishing Clubs .....	14	147	1,280
Hospitality Clubs .....	7	81	736
Home Defense Clubs .....	7	61	728
4-H Home Garden Clubs .....	24	100	882
Total .....	147	1,306	11,860

### Local Leaders Recognized

Arrangements were made and programmes planned for experienced local leaders of 4-H Homemaking Clubs to visit the Royal Winter Fair as guests of the Ontario Department of Agriculture. While over 500 leaders were eligible, having led two clubs during 1957 and 1958 and not having had two previous trips, only 226 were able to take advantage of trips because of home responsibilities.

Luncheons were arranged for one day of the training school for 2,283 leaders.

### Juniors at Fairs

Some 581 club members took part in the 4-H Homemaking Club programme at Central Canada and Canadian National Exhibitions, Western and Peterborough Fairs.

At Central Canada, members live in club camps and follow a two-day programme. At the Canadian National Exhibition they have a three-day programme and are given accommodation for two nights at a University Women's Residence. Suitable living accommodation, an auditorium for judging, demonstrations and exhibits and a well planned programme for members make these inter-county days, held before school starts in September, a happy and worthwhile experience for senior club members.

At Stratford, Belleville, Owen Sound and Teeswater, similar one-day programmes were featured with over 280 individuals taking part. Some sixty educational exhibits were shown by Junior Institutes and Farm Girl's Clubs at such fairs as Galt, Brampton, Kingston, Markham, Milton, Ridgetown and Caledonia. Many local fairs had classes for some phase of 4-H Homemaking Club work with individual and club exhibits as well as special sections for young women in Junior Institutes and Junior Farmer Associations. In all cases these exhibits were arranged in co-operation with County or District Home Economists.

### Pins, Certificates and Spoons

County Honour pins and certificates were presented to 745 members who completed six 4-H Homemaking Club units. Provincial Honour Certificates and pins were awarded to 162 members who completed twelve units.

National 4-H Council certificates were presented to 60 local leaders completing five years as club leader.

A 4-H Homemaking Club sterling silver spoon was presented to each leader and assistant leader and to members who completed their work satisfactorily.

### National Week and Provincial Girls' Conference

Five senior members were selected from Bruce, Lennox and Addington, Wentworth, Renfrew and North Simcoe 4-H Homemaking Clubs to represent Ontario at the National Club Week.

The Fifth Provincial Girls' Conference for 4-H Homemaking Club members was held at the Ontario Agricultural College in June. Every county and district was represented by 191 experienced club members who were selected to attend. Travelling expenses to the conference were paid by the Department. The conference theme was: "The Club Girl in To-Day's World".

### Junior Institutes

Junior Institutes, Farm Girls' Clubs and rural young women associated with the Junior Farmers' Association continued to co-operate with Women's Institutes and Junior Farmers in planning and carrying on programmes concerned with home and family life, agriculture, community living and citizenship. They gave leadership in sponsoring 4-H Homemaking Clubs and with Junior Farmers held Field Days, Sunday Services, Choral Classes, Debates, Public Speaking, Farm and Home Safety Projects and a Provincial Leadership Training Camp. They attended Junior Farmer Conferences in Toronto, Kemptville, Guelph and five one-day leadership training schools.

Sixty-four programme kits were used by various groups in preparing monthly programmes. Several clubs have used film strips on Family Living available from the Home Economics Service.

### Scholarships

Experienced club members received various Women's Institute Scholarships which gave them financial assistance for some educational purpose — The Dorothy Fitcher Ontario Women's Institute Scholarship, The Ontario Women's Institute Scholarship and some county and district scholarships. The number of county and district Women's Institute scholarships is steadily increasing.

### Exchange Visits

Members entertained in their homes overseas visitors from the Scottish Association of Young Farmers' Clubs and the National Federation of Young Farmers' Clubs of England and Wales. The President of the Junior Farmer Association and a



Provincial Honour 4-H Homemaking Club member in the Junior Farmer-Junior Institute organization were included in the party of four Ontario Juniors given the Ontario Government trip to Great Britain.

Delegates were sent to the R.Y. U.S.A. (Rural Youth of the United States of America) Conference in Colorado, the Tri-State Conference in Pennsylvania, the New England Young Men and Young Women's Conference in Massachusetts and to the annual Farm Young People's week in Edmonton.

### Staff

The Home Economics Service Staff consists of 51 members. The head office staff includes the Director, 5 Supervisors, 17 Home Economists and Field Assistants and 6 clerical staff. There are 23 County and District Home Economists.

### FEDERATED WOMEN'S INSTITUTES OF ONTARIO

The Extension Branch, Home Economics Service works closely with the Federated Women's Institutes of Ontario and the Director sits on the Provincial Board as an honorary member. At the annual meeting of the Federated Women's Institutes of Ontario Provincial Board, Mrs. James Haggerty, Napanee, was again elected President and Mrs. G. Gordon Maynard, Unionville was again elected Secretary.

The establishment of the F.W.I.O. office last year, in the same building as the Home Economics Service headquarters, has made it very convenient for the Director to work with the provincial executive in matters involving extension service or other business where both offices are concerned.

The Federated Women's Institutes of Ontario held conventions in 13 areas of the province last year with a total attendance of 3,885; an annual Officers' Conference at Guelph attended by nearly 850 women; and 257 at the Women's Institute Holidays at Guelph and Kemptville. Staff members assisted with the conference and holiday programmes.

The Federated Women's Institutes of Ontario had a tent at the International Ploughing Match at Crysler and a booth at the Royal Winter Fair.

### Branches and Membership

Number of Senior Women's Institutes in Ontario, March 31, 1959 .....	1,425
Number of Junior Women's Institutes in Ontario, March 31, 1959 .....	51
Total number of Women's Institutes in Ontario, March 31, 1959 .....	1,476
Membership, March 31, 1959 .....	40,681
Institutes organized during the year .....	11
Institutes disbanded during the year .....	13
Institutes re-organized during the year .....	3
Of the Institutes organized 8 were Senior, 3 were Junior	
Of the Institutes disbanded 9 were Senior, 4 were Junior	
Of the Institutes re-organized all were Junior	

### Legislative Grants

To districts \$4,083.50; to convention areas \$670.00. Total \$4,753.50.

### THE FRUIT AND VEGETABLE EXTENSION SERVICE

The Fruit and Vegetable Extension Service with its prime endeavour to improve the farm family unit has continued to render and expand its services to those

engaged in fruit and vegetable production in the Province. The personnel of the Service is comprised of eleven technically trained men located in the main production areas and who render specialized assistance to growers on problems and culture affecting the production and marketing of the crops. In May 1958, the Service was expanded to Essex County where an office was established at the Dominion Experimental Station near Harrow for the use of the Fruit and Vegetable Extension Specialist, Mr. J. A. Cutcliffe, transferred from Prince Edward County on May 15, 1958.

The Extension Specialists bring to producers through demonstrations, press and radio releases, television programmes and organized meetings, the results of research which are an endeavour to reduce the cost of production and provide a more satisfactory economic and social life to these specialized primary producers.

### General Crop Conditions and Marketing

The growing season of 1958 will be long remembered as one in which nature provided conditions for the growth of very bountiful crops of fruits and vegetables. Most fruit and vegetable crops got away to a fast start about the middle of April with some above normal temperatures being recorded in some districts along with little rainfall. By April 25th most early crops were planted and fruit buds were showing considerable green tissue. Early May saw increased rainfall and spells of cool weather. Many districts had some frost injury during the critical bloom period with minor damage to some vegetables and fruits. In Norfolk County and parts of the Toronto-Hamilton district frost caused reduced yields of strawberries. Muck vegetable areas experienced strong winds in May causing seeds and seedlings to be exposed requiring considerable replanting.

Crops in general progressed well in most areas following the setbacks in May. Eastern Ontario had some excessive rainfall which made for somewhat difficult control of apple scab. Drought conditions were prevalent in the Georgian Bay district during July and early August. Later, rains alleviated this condition.

Harvesting of crops got under way at normal time for the many districts. It soon became apparent that most tree fruits would show above normal yields. The apple crop, when picking was completed, was estimated at nearly five million bushels. This is considered a record. The peach and cherry crops were heavy and taxed growers to harvest the crop.

Strawberry plantings which did not suffer from frost harvested a good crop. The season was considered ideal for the strawberry crop which experienced relatively cool weather during the harvesting period.

On the muck vegetable areas by mid-July most crops showed excellent growth and development. Disease and insect pests were at a minimum and indications were for a good yield of all crops. Some minor damage was caused by a small tornado at Bradford on August 31 accompanied by hail. During the latter part of the season good weather prevailed which was ideal for harvesting. The crops went to market and into storage in excellent condition.

The marketing of fruit and vegetable crops proved to be the most difficult in many years. As is usually the case when large crops are harvested difficulties occur in marketing and this year proved no exception. Crops which were in difficulty marketwise were asparagus, cabbage, cauliflower, early and late potatoes, lettuce, carrots, cherries, peaches, pears and apples. Other crops such as tomatoes, celery, onions, strawberries and grapes moved in most cases to a firm market.

The various marketing boards which are responsible for processing fruit crops and fresh market peaches experienced a most difficult year. At year end there remain

sizeable stocks of some processed fruits on hand. Some further difficulties were experienced in some areas where processing plants failed to contract for some crops.

Of interest with regard to apple marketing was the decision by apple growers, when it became apparent that there would be a need for promotion and advertising to move the crop got solidly behind a promotion scheme. This no doubt helped to sell many apples. Difficulties were encountered in that apples coming out of storage did not have very long shelf life. The increased capacity of controlled atmosphere storages lengthened the marketing season. In the Province of Ontario there is estimated to be controlled atmosphere storage for excess of 350,000 bushels of apples. A year ago there was controlled atmosphere storage for some 200,000 bushels of apples which shows considerable new construction during the year. It is expected there will be no sizeable increase during the coming year.

### Insects and Diseases

With the exception of onion maggot most insects and diseases which attack fruits and vegetables were kept well under control. There were isolated minor outbreaks of one pest or another in parts of the Province but few caused serious losses.

The Fruit and Vegetable Extension Service is becoming increasingly alarmed at the rapidity that many insects are becoming resistant to many of the newer spray materials. During the year all onion growing areas experienced severe losses as the result of the onion maggot becoming resistant to the chlorinated hydrocarbon materials. This resistance appeared a year ago in some onion areas outside of Ontario and we will benefit from the research on resistance. The former recommendations have become obsolete and new recommendations are prepared advising use of organic phosphates for control of onion maggot for this year, 1959.

Two known cases of resistance to D.D.T. by codling which attacks apples were found during the year. During the late forties codling moth became resistant to arsenate of lead and with the advent of D.D.T. our apple crops were saved. Now codling moth is showing resistance which will require research for materials to replace D.D.T. Two-spotted spider mite and European red mite which are pests on most tree fruits are showing resistance to the organic phosphates. Many fruit growers in 1959 will be required to resort to the use of dormant oil to endeavour to keep mites under control. Scale insects such as Lecanium, San José and Cottony peach scale are becoming very widespread and here again growers will have to resort to the use of dormant oils.

This whole matter of insect resistance is of major concern to research workers in both Canada and the United States. It seems there is never-ending search for new materials to replace those which have outlived their usefulness because of resistance. Manufacturers of spray materials are endeavouring to keep pace but the monumental cost involved in the development of new materials is becoming almost prohibitive.

Nematodes are now prevalent on many horticultural crops. It is becoming increasingly difficult to keep some under proper control. During the year two apple orchards in the Toronto-Hamilton area were found to be infested with root nematodes. The Research Branch of the Canada Department of Agriculture feels this is of importance to require the full time of a research scientist to deal with the species.

A survey in the Niagara Peninsula on the distribution of Grape Phylloxera indicated that it is very widespread on grape roots. This is a species of root louse which sucks the sap from the roots. Here again as with nematodes attacking apples research personnel will deal specifically with Grape Phylloxera until a satisfactory control can be found.



### Demonstration Work in Fruits and Vegetables

Successful extension requires the passing along of the results of research to producers and their final application of the results. This extending of information is carried out in part by the use of demonstrations on plots on growers' farms. During the year Fruit and Vegetable Extension Specialists had some twenty demonstrational projects on farms. As the season progresses Extension Specialists organize meetings at the farm level where demonstrations are set up in order that the growers may assess some new practice. Examples of demonstrational projects are:

- Soil fumigation on strawberries
- Virus-free strawberry variety introductions
- New strawberry variety trials
- Staked and dwarf tomato variety trials
- Weed control through use of plastic mulches on tomatoes and strawberries
- Soil fumigation for eggplants
- Chemical weed control around apple trees
- Rooting of hardwood cuttings of apple rootstocks with various hormones
- Improved pruning platforms
- Processing tomato variety trials.

### Research Work in Fruits and Vegetables

The Province of Ontario is indeed fortunate in having many research centres carrying out research on projects designed to help the fruit and vegetable grower. Many of these research projects being of the applied type require further tests under field conditions which for the most part are not practical at the research centre. When field research is necessary those engaged in research are in contact with Fruit and Vegetable Extension Specialists for assistance in lining up plots on growers' farms so that an accurate assessment may be made under actual field conditions. During the year Extension Specialists assisted research by assisting in organizing some twenty-four research projects. Some of these are:

- Trace element deficiencies in vegetables
- Leaf analysis — standardization of levels for pears and cherries
- Calcium deficiency in staked tomatoes
- Nutrients levels in tomato soils during the growing season
- Pear pollination and fertility studies
- Control of onion maggot resistant to chlorinated hydrocarbons
- Control of leaf hoppers, the vector for aster yellows in celery
- Fertility requirements for dwarf apples
- Cost of production survey on apples
- Air pollution and its effect on peach foliage and fruit
- Tipburn studies in head lettuce
- Effect of soil applications of copper sulphate to muck soils on the performance of carrot, lettuce and onion
- Fall and spring applications of fertilizer for onions on muck soil
- Irrigation studies on processing crops.

### The Spray Service

The successful production of fruits and vegetables requires proper control of the various insects and diseases which attack the crops. In order that the grower be kept informed on matters of pest identification, proper use of spray materials and time of application to ensure a clean crop, timely letters are forwarded to growers from Fruit and Vegetable Extension Specialists' offices. The value of the Spray Service is becoming increasingly important because of the multiplicity of spray

materials, resistance of certain pests to sprays requiring new materials and more exact timing for application.

The Food and Drug Directorate of the Department of National Health and Welfare in an endeavour to safeguard the health of the consumer of fruits and vegetables from residues of harmful spray materials which may remain on these products require that spray materials must not be applied to crops within a certain number of days before harvest. All recommendations for use of sprays carried in the Spray Service letters must be such that growers will not at harvest have produce which may carry excessive residues of spray materials. During the year approximately one hundred and fifteen thousand letters were forwarded to fruit and vegetable growers.

### Leaf Analysis Service

The Leaf Analysis Service announced last spring by the Horticultural Experiment Station for growers of apples, peaches and grapes commenced during the year. Briefly, Leaf Analysis as the name implies is an analysis of the foliage to determine the amount of the various major and minor elements. The analysis when compared to levels which are required for good production indicate the necessary fertilizers to be applied to fruit trees or vines. The cost to the grower for each sample is \$5.00. During the year samples analyzed were as follows: 280 apples, 63 peach and 30 grape. The first year's response was gratifying.

The Fruit and Vegetable Extension Specialists co-operated with the Horticultural Experiment Station in the organization and operation of the Service. The specialists released the application forms, collected the fees and leaf samples from the growers. Where necessary, advice was given to growers on the interpretation of the analysis and any other recommendations thought necessary. This is of value to the grower as the Extension Specialist has a knowledge of the orchard or vineyard. The leaf analysis in the first year was very well received by growers of apples, peaches and grapes and indicated some of the inadequacies of the soil test. It is anticipated that there will be increased use made of the Service during the coming year. Leaf analysis is also used as an extension tool for problem orchards where a trouble is difficult to determine.

### Farm Business Management

Production, the field that requires a large percentage of the time of the Fruit and Vegetable Extension Specialists is one link in a successful operation. Farm business management is the next step and, of course, marketing is tied in very closely. Fruit and vegetable growers are becoming more aware that their farms are a business enterprise and should be treated as such. A profitable farm business must of necessity keep a full set of records and account books. Some increased interest is being shown by growers and some representatives of industry who operate farms, in special account books adapted for their use. To meet this need for assistance in farm business management a two and one-half day course in farm business management was organized in February for all Fruit and Vegetable Extension Specialists. Personnel of the Farm Economics Branch and the Department of Agricultural Economics co-operated in organizing and providing speakers for the course. Extension Specialists are prepared as time permits to assist growers in their business.

### Marketing Assistance

The Marketing of the fruit and vegetable crops in Ontario because of increased competition from both home and abroad poses a real problem to the growers. Growers' organizations are continually requesting assistance in the field of marketing.

Fruit and Vegetable Extension Specialists endeavour to assist by providing information on crop estimates, picking requirements, packing, storage, shipping and to some extent advertising and promotion. Comments by some organizations suggest there may be need for specialized assistance in the field of marketing of fruits and vegetables.

#### 4-H Club Work

Increased assistance was given to the younger members of farm families through the 4-H Club program. The Fruit and Vegetable Extension Specialists take an active interest in the five Grape Clubs in the Niagara Peninsula as well as the Potato Clubs throughout the Province. In the Georgian Bay District assistance was given to the organization of two 4-H Strawberry Clubs. In the Bradford Marsh area a 4-H Onion club received assistance. Most of this assistance provided to the various clubs is mostly of a technical nature with some coaching in judging being given. At the time of the Provincial 4-H Club judging competitions at Guelph, Extension Specialists act as judges for the potato judging.

#### The Farm Accident Survey

The Fruit and Vegetable Extension Specialists are co-operating with the Agricultural Representatives in organizing this very important survey. When the survey is completed some assessment will be made in so far as accidents concern fruit and vegetable growers. Of particular interest will be accidents caused by improper use of spray materials.

#### New Liskeard Fruit Demonstration Project

Development of agriculture in Northern Ontario has been of prime interest of the Extension Branch. For several years considerable thought has been given to the possibilities for growing some hardy varieties of tree fruits in Northern Ontario. Through the co-operation of the Experimental Farm at Morden, Manitoba, Horticultural Experiment Station, Vineland, and the Demonstration Farm at New Liskeard, a small project was inaugurated at New Liskeard to test some hardy kinds of tree fruits namely, apples, pears, plums and cherries. During the fall of 1957 1½ acres at the Demonstration Farm were prepared for planting in the spring of 1958. Planting followed in May with the trees making fair growth during the summer months. Precautions were taken to prevent possible rodent injury during the dormant season. The extremely cold winter of 1958-59 will determine to some extent those fruits and varieties which may be suitable for the New Liskeard area.

#### Miscellaneous Extension Activities

The Fruit and Vegetable Extension Specialists because of their interest and desire to co-operate for the betterment of the fruit and vegetable industry give considerable of their time and effort over and above their normal duties. During the year they act on many committees and give technical assistance to groups connected with the industry. Of particular interest during the year was the request for assistance in the organization of the Eight Thousand Quart Club. This Club, sponsored by the Ontario Berry Growers' Marketing Board had as its aim to increase the per acre yield of strawberries by growers and especially those having four acres or more to produce on an average at least eight thousand quarts to the acre. Extension Specialists interested growers in the competition, measured acreages and totalled yields. At the completion of the season four growers qualified having produced in excess of the required average yield of eight thousand quarts of strawberries on four acres or more. Recognition of this achievement was made by the Ontario Berry Growers Marketing Board with gold lapel buttons being presented to the successful



competitors. This is only one example of the many miscellaneous extension activities which are of interest to the Extension Specialists.

#### Press, Radio and Television

The local daily and weekly newspapers provide an excellent medium to promote the various extension programmes. Besides presenting articles on culture and production they also provide space for announcements of meetings. During the year Fruit and Vegetable Extension Specialists prepared forty-five press releases in connection with production and culture.

Radio stations in local areas are most co-operative by providing much free time for the extending of information. Broadcasts are made on a daily, weekly and monthly basis as well as the many spot announcements which may be of an emergency nature. Eighteen radio tapes were prepared on horticultural subjects for the Ontario Radio Tape Service. Extension Specialists participated in 233 radio broadcasts and spot announcements during the year.

Over 80% of the Fruit and Vegetable growers in Ontario have television receivers and Extension Specialists are making use of this medium of extension. Programmes must of necessity be prepared for both rural and urban audiences. Much time is required for the preparation of programmes. Of interest is the fact that Extension Specialists participated in ten live television broadcasts during the year.

#### TOBACCO EXTENSION SERVICE

The Tobacco Extension Service continued to render and increase assistance to tobacco growers in the Province of Ontario. The Service maintains its headquarters at the Tobacco Sub-station, Delhi through the co-operation of the Canada Department of Agriculture. The Tobacco Extension Specialists by the advantageous use of the various extension methods carry out many programmes which are designed to reduce the cost of production, produce a high quality product and finally improve the economic and social life of the tobacco grower and his family.

During the year the Tobacco Extension Specialists dealt with a considerable number of problems related to the culture of the tobacco crop. Mainly those dealing with diseases, insects and fertility were especially prevalent and a number of farm visits were required to deal adequately with these problems. A marked increase in the number of new tobacco farms in established areas as well as new areas, such as in Renfrew County, were started during 1958 and considerable advice on fertilization, varieties and general handling of the crop was sought by growers on these farms.

#### Crop Conditions

The 1958 tobacco crop was subjected to several extremes in weather conditions during the growing season. The detrimental affects of the weather on the crop are reflected more in the general quality of tobacco produced rather than the average yield obtained per acre. The average yield which has been estimated at approximately 1,400 lbs. per acre is the highest since 1954 when an average of 1,436 lbs. per acre were produced. However, the quality of the 1958 crop is considered to be lower than previous crops as it contains an unusually high proportion of dark and green grades. The widespread use of maleic hydrazide, to inhibit sucker growth and unfavourable weather conditions throughout the growing season, particularly during harvest, are believed to be mainly responsible for the increase in these undesirable grades.

Plant development in the greenhouse was very rapid with the abundance of sunny weather throughout April and May. In a number of cases growers were forced to begin planting as early as the 16th of May. Unusually cold weather persisted from then until the end of the month. A frost on May 26 caused a severe setback to the plants in some areas and a few growers were forced to replant. Because of the cold weather the crop started rather slowly in the field. Near the end of planting exceptionally high winds inflicted heavy damage on farms in all tobacco growing areas of Ontario. A few growers received such heavy damage that they had to plant almost their entire crop again. Many crops became very uneven as a result of the high winds.

An above normal amount of rainfall was received during the latter part of June and early July so that the tobacco plants tended to develop rather shallow root systems. Consequently when dry weather occurred later in July the plants suffered quite badly and required considerable amounts of supplemental irrigation water. Many crops were irrigated twice in the main tobacco belt and in the Port Hope and Alliston areas three irrigations were not uncommon.

Harvesting operations commenced during the first two weeks of August. In general, the leaf harvested from the lower half of the plant cured out reasonably well. However, later in the harvesting season occasional rains and cold nights tended to delay maturity and make the curing of the upper leaves more difficult. Despite the delay in maturity practically all of the leaf was harvested before there was any frost.

## Diseases and Disorders

### Greenhouse

The generally favourable weather which prevailed during most of the greenhouse season helped to keep disease and growth problems from causing serious losses in most greenhouses. In spite of favourable weather there were still a few cases of white mold growth on seed-bed surfaces early in the season before seedlings emerged. A few cases of "heaving-out" or "tipping-over" were noticed. The most serious seed-bed problem was damping-off. It caused quite serious losses in greenhouses in the Delhi and Alliston areas. Where there was an extremely heavy infestation of the disease, the normal control material did not check the disease. A few cases of black root rot were encountered near transplanting stage and was no doubt caused by improper sterilization of the muck in the greenhouse.

A peculiar situation arose in greenhouses where the Delcrest variety was being grown. Scattered plants turned yellow and failed to develop normal green foliage. Samples of these plants were grown to maturity, self-fertilized and plants grown from the seed. By counting developing plants it was determined that the tendency for chlorotic seedlings was a genetically inherited factor. By further breeding this tendency toward chlorosis could be eliminated.

As usual some greenhouses had some injury from 2,4-D being used nearby as well as some injury caused by the use of a wood preservative in the greenhouse.

### Field

Brown root rot was considered the most serious field disease during the 1958 season for the flue-cured crop. Where root rot is present in most cases there are high populations of the root lesion nematode (*Pratylenchus* sp.). Research has shown that proper soil fumigation will give adequate control. It is anticipated that during the 1959 season a considerable acreage of tobacco soil will be fumigated with one of the recommended materials, Telone or D-D.

Some damage to the crop was caused by fungus diseases, being mainly "brown spot," "frog-eye" and non-parasitic leaf spot. Some blue mold was encountered as well as some increase in the prevalence of virus diseases.

Weather Fleck Leaf Spot was not serious in 1958. This physiological disease was of real concern in 1957 when a percentage of the crop was lost. Growers in susceptible areas alleviated the situation to some considerable extent by planting the Delcrest variety which is not so susceptible as other varieties.

### Insects

Insects were generally not a serious problem in tobacco during the year. Cutworms were present in a few greenhouses and caused some minor damage. Ants, as usual, were a nuisance and in a few cases control measures were necessary. Cutworms and wireworms were adequately controlled in the field through the use of the recommended materials. An unusual outbreak of corn root maggot occurred shortly after planting had been finished and damage was serious enough to warrant some replanting. Rose chafers and four-lined plant bugs were of minor concern. Tobacco and tomato hornworms were adequately controlled through the use of recommended materials.

### Marketing

Late in April 1958 the Directors of the Ontario Flue-cured Tobacco Growers' Marketing Board voted unanimously in favour of an acreage reduction of 15% applied to all of the basic allotment except the first 6 acres. With this reduction over 125,000 acres could have been grown last year, but as is usually the case, the actual acreage grown fell well below the acreage quota set by the Board and when measuring was complete it was revealed that approximately 118,500 acres of tobacco had been planted.

Price negotiations for the 1958 tobacco crop began in April, before the crop had been planted, but no settlement was reached as the buying companies failed to appoint their three members of the six-man price committee. Further meetings throughout the summer failed to bring about any price settlement. Arbitration was finally necessary to settle the price for the 1958 crop. The Arbitration Board met in Welland on September 29 and that week, in the absence of any buyer witnesses, minimum grade prices were established instead of the minimum average price which had been set on previous crops. It was expected, however, that the minimum prices set would result in an overall average of approximately 52 cents. No allowance was made for grading and tying tobacco as had previously been the case.

The 1958 tobacco auction market opened at Tillsonburg on November 6 but after two days the market was closed because too much tobacco failed to reach the minimum grade price. An effort was made to obtain Federal support for the purchase of tobacco on the market which did not receive the minimum grade price. The Board was unable to obtain this support and the market re-opened on December 1 at the Delhi, Tillsonburg and Aylmer auction exchanges. Sales continued until December 23 when the warehouses were again closed because of too much unsold tobacco. The main difficulty appeared to be in sales of the dark and green leaf grades and after meeting with the companies the board decided to drop the minimum grade prices from six grades. Sales resumed at the three auction exchanges on January 12. Tobacco has been sold steadily since then although there has been considerable variation in the prices offered for the six grades from which the minimum price was removed. The 1958 crop contained higher than normal amounts of these grades and consequently the average price to the tobacco grower is not as



high as originally expected. The flue-cured tobacco crop was estimated to be approximately 165 to 170 millions of pounds. Up to March 31 the average price paid was 48.98 cents per pound.

### General Tobacco Extension Work

A large proportion of the time of the Tobacco Extension Specialists is taken up in answering inquiries concerning the numerous problems involved in the production of this highly specialized crop. This is evidenced in the fact that some 925 tobacco growers made personal visits to the office to discuss some phase of tobacco culture.

The Tobacco Extension Specialists also provide articles for tobacco periodicals as well as press releases. Considerable use of radio is made to further the extension programme. During the year they participated in one television programme.

### Demonstrational Projects

Four demonstration plots were planted last year; three in the Port Hope area and one in the Alliston area. Each plot consisted of six different varieties and six fertilizer treatments comparing the effects of high and low levels of nitrogen, phosphate and potash. A Twilight meeting was held in each area just before the start of harvest.

### Research Projects

The Tobacco Extension Service co-operated with research personnel on committees investigating weather fleck, insecticide injury to tobacco, soil fumigation investigations, insects as disease carrier and the relation of irrigation to insects and diseases. The Tobacco Extension Service now has membership on the Tobacco Committee of the Advisory Fertilizer Board of Ontario.

### Soil Testing

About 1,100 soil sample boxes were distributed by the Tobacco Extension Service during the past fiscal year. Approximately 300 soil reports were received from the Soils Department at O.A.C., Guelph for fertilizer recommendations. A number of recommendations are made by mail but where possible the results are discussed personally with the farmer as it is felt that more reliable recommendations can be made in this way.

### Farm Accident Survey

The Tobacco Extension Specialists selected township chairmen for two townships in Norfolk county. Help was given to the township chairmen in the selection of reporters and an educational meeting for the reporters was arranged in each township before the start of the survey.

## AGRICULTURAL ENGINEERING EXTENSION SERVICE

Several factors are contributing to the demand by farmers for more agricultural engineering services.

Farms are becoming fewer and increasing in size. These larger units often have to remodel existing structures or build new ones to house larger herds.

The in-service training programme and the studies on economics keep personnel fully informed on the newest developments in this field.

Drainage surveying continues to be a major activity of the Agricultural Engineering Extension Service. Land that was drained many years ago is now being re-surveyed and retiled. Farms that are comparatively dry with only small wet areas, also show an improvement in productivity when drained.

During the year 1958 it is estimated that about 65 million tile of all sizes were installed in the Province. Almost 21,500,000 of this total were installed on surveys made by the Agricultural Engineering Extension staff. Tile machine operators, who normally install tile without the benefit of one of our surveys in easy terrain, often request the help of our personnel in more difficult areas. These areas frequently offer hazards such as difficulty in determining outlets, exceedingly level ground, or high-priced orchard land such as in the Niagara District.

Mechanization and specialization of our farms has increased the work of the Agricultural Engineer in this area.

The Liaison Extension and Research Committee in Agricultural Engineering which was organized at the request of C. C. E. Downing, Professor and Head of the Department of Engineering Science at the Ontario Agricultural College, and with the approval of the Deputy Minister of Agriculture and the Director of Extension, Ontario Department of Agriculture, fulfills a necessary function. This development also had the approval of Dr. C. H. Goulden, formerly Director of the Experimental Farms Service, Canada Department of Agriculture, Ottawa.

A meeting was held at Ottawa on September 3, 4, and 5, 1958, with the Federal people interested in the field of agricultural engineering, personnel of the Engineering Science Department, O.A.C., and the Ontario Agricultural Engineering Extension Service. The research work presently underway was reviewed. New projects being planned at Ottawa and Guelph were outlined. The Extension Service presented problems they wished to have investigated. Agricultural engineering bulletins and circulars were reviewed.

An Ontario committee to make recommendations on building plans was organized at the request of Professor C. G. E. Downing. The recommendations of this committee are to be included in the catalogues of the Canadian Farm Building Plan Service.

Work with the 4-H Tractor clubs continued. This work is an excellent method of teaching safety with farm machinery. In addition, the Engineering Extension Specialist when he visits a farm, has an opportunity to discuss all phases of the farmer's engineering problems.

## Summary of Extension Services

### Drainage

Total calls .....	585
Number of acres systematically surveyed .....	23,100
Number of feet of profile surveyed .....	99,900
Number of feet of open ditch surveyed .....	27,000
Number of preliminary surveys .....	114
Number of advisory surveys .....	194
Number of inspections .....	31
Number of applications on file .....	810

Applications on file show a reduction of 130 compared to last year, but still number 200 more than were surveyed in the 1958 season. An increase of 2,500 acres of systematic surveys was achieved with the help of summer assistants.

Drainage tile was in short supply in Central Ontario during the summer months, but appeared to be adequate in other regions. Prices remain the same as in previous years — 4¢ to 6¢ per foot for 4" tile and 4¢ to 11¢ for installation, depending on depth and soil type. Some ditching machines have changed ownership and a few additional new machines have been acquired. A tile manufacturing plant in Bracebridge has been in full production this winter for the first time. Indications point to a machine in operation in Northern Ontario this year. No machine is available in this area as yet.

Some 23 townships passed the Tile Drainage by-law increasing the total to 175 and 8 townships which had previously passed the by-law increased the amount to from \$100,000. — \$300,000. each.

A total of \$1,001,300.00 was borrowed through the townships under the Tile Drainage Act, by the farmers, for tile installation. A total of \$700,400.00 was borrowed during 1957-1958. A detailed list of townships and money borrowed appears elsewhere in this report.

#### Pond Surveys

Dams designed .....	79
Dugout ponds designed .....	128
Total .....	207
Applications on file .....	287

Pond requests show a slight increase over last year.

#### Buildings

New buildings .....	246
Buildings and stables remodelled .....	368
Ventilation calls .....	128
Total .....	742

Building and ventilation applications on file 365.

Requests for advice on new buildings, remodelling old structures and a combination of the two have shown a considerable increase during the past year. As farmers become aware of the service available, they are rapidly taking advantage of it. Applications on file have increased by 60 over last year.

#### 4-H Clubs

33 4-H Tractor Maintenance Clubs were organized with a total membership of 603. Demonstrations were conducted by the members in many clubs and it is felt that this is a sound development.

#### New Engineering Developments

The trend to loose housing of hogs in both open front pole barns and closed insulated barns is quite apparent. Due to the past severe winter it is quite probable that the closed, insulated barns will gain increased popularity, at least in the colder areas. However, several open front pole barns have been operated successfully in the colder, snow belts, which indicates that profitable operation is a result of good management even under adverse conditions.



Increasing interest is evinced in methods of heating the farrowing house. J. E. Brubaker has made considerable investigation into the design of heated farrowing crates and pens and has formulated a design using electrical heating cables imbedded in the concrete floor. This plan has been forwarded to all specialists as an information sheet and will be included in the Canadian Farm Building Plan Service. Other methods of supplying supplementary heat are: the commonly used heat lamp; hot air furnaces; and hot water pipe radiant heating floors.

A new farrowing house is being built at the Western Ontario Agricultural School, in which experiments will be conducted to determine the optimum size of farrowing pen; the amount of heated floor required; and other applied research data. The results of these experiments should be of considerable value to extension personnel.

Plans have been drafted by Moggach and Brubaker for an open front hog feeding barn without a paved yard. This system may show advantages under further investigation. It is being considered for the Canadian Farm Building Plan Service.

As a direct result of the Michigan farm tour by the Engineering Extension Service last year a large number of clear span buildings have been designed and erected throughout the province. This type of structure has been readily accepted by beef and dairy farmers and has application in housing other types of livestock and for various uses. K. A. Clarke has designed two pole barns using a tilted truss, which may have application for some districts.

Tilt-up concrete construction of bunker silos may compete with the expensive, large diameter, tower silos, which are now becoming popular. Four tilt-up silos were constructed last fall in southwestern Ontario. Plans were designed by J. E. Turnbull. Steel reinforced slabs are poured in forms on the ground and then tilted erect, when cured.

Several 20' x 24' diameter tower silos have been constructed during the past year for use in feeding the larger dairy herds. In all cases, a silo unloader is used. Feed bunks are of two types: (1) the "lazy Susan," which surrounds the silos and has a rotating floor in the bunk, powered by an electric motor, and (2) a double sided feed bunk projecting from the silo and using an electrically driven auger to distribute the silage.

Hay conditioners are receiving considerable interest and many of the farms producing a large amount of forage are using this machine. While costing approximately \$700.00 the annual cost is not excessive when amortized over 10 years. The increased feeding value and palatability of the hay, particularly under variable weather conditions, indicate that this machine will develop a much wider acceptance.

Hay pelletizers or wafer-making machines are developing as a hay harvesting method, but this machine is not, as yet, economical. Further experimentation may develop a practical farm machine.

With the increase in 5,000 to 50,000 bird layer and broiler flocks, the heating of houses for brooding broilers has gained prominence. Gas heated buildings are a considerable fire hazard with a resulting increase in insurance premiums. W. Ross Milne has done considerable work in utilizing fin pipe for hot water heating. This system reduces insurance rates and operates at a higher efficiency with consequent lower operating costs.

Mechanical gutter cleaners are being used in the large layer installations to reduce the moisture and enable the birds to be concentrated into 1 square foot to 2 square feet per bird, thereby reducing initial costs per bird.

An information sheet system was inaugurated within the Agricultural Engineering Extension Service to maintain awareness of new developments; to present progress reports on current research and inform the agricultural engineering staff of information which is not released for general publication. These sheets emanate from, and are distributed to, members of our own staff, the engineering science department of the Ontario Agricultural College, the Western Ontario Agricultural School, the Kemptville Agricultural School and the Central Experimental Farm. It is felt by all participants that this is an excellent method of distributing restricted or confidential information to agricultural engineering personnel.

## *Farm Economics and Statistics Branch*

The Branch is now designated as the "Farm Economics and Statistics Branch". This change in name reflects a re-organization during the year by which the work of the Farm Economics Branch and the Statistics Section, of the former Statistics and Publications Branch, have been amalgamated.

Rapid and often drastic developments in the business aspects of Ontario agriculture are increasing the demand for the services provided by the Branch. More and more economic information is being called for in the form of agricultural statistics and the findings of production and marketing studies. An increasing interest in farm management calls for more and more information on the relative advantages of different farm enterprises and the factors associated with earnings. Negotiations respecting prices call for more and more basic data respecting costs, market movements, etc.

The Branch has attempted to satisfy these demands for information from growers, growers' organizations and extension personnel by assembling useful agricultural statistics, by making studies of important phases of agricultural production and marketing and by publishing the information as it is obtained. In the case of trends in the dairy industry, this involved the appointment of a new specialist who is devoting his full time to this subject.

It is often difficult to measure the economic value of a service of this sort. In at least one field there is clear evidence of improved earnings for producers.

The Dairy Herd Improvement project is an integrated programme of the Live-stock Branch, the Extension Branch, and the Farm Economics and Statistics Branch. This Branch is responsible for the collection and analysis of cost data from all of the herds serviced — about 1200 in all. Each year every operator has been advised of the weakest part of his herd management and given some information respecting methods used by other operators to solve the same problem.

During a five-year period of this program, the average earnings of these herds have improved substantially. The figures for 26 Associations whose business year ended April 30, 1958, are given below.

### 5 YEARS OF PROGRESS IN SOME DAIRY HERD IMPROVEMENT ASSOCIATIONS YEARS FINISHING APRIL 30, 1954 TO 1958 INCLUSIVE

Name of Association	Gain In Net Returns	Gain in Milk Production per Cow	Less Labour Hrs. per Cow	Increase In Milk per \$100 Capital	Gain In Size	% Rise In Price Received	% Decrease In Cost per Cwt. of Milk
	\$	lbs.	Hrs. per Cow	cwts.	No. of Cows	%	%
1. Halton Centre .....	2,864	1,542	50	1	7	4.5	23.2
2. Durham .....	2,849	597	23	1	8	6.0	22.5
3. Ontario Brooklin .....	2,792	1,063	26	4	4	3.9	20.6
4. Halton West .....	2,472	2,082	12	7	4	5.3	22.4
5. Oxford West .....	2,307	710	24	4	2	24.8	23.5
6. Northumberland .....	2,194	983	31	2	5	12.3	13.8
7. Elgin East .....	1,931	—197	42	1	3	18.0	7.6
8. Simcoe Elm. Stayner	1,866	9	64	0	12	7.6	11.5



9. Prince Ed. Hastings ..	1,809	2,261	23	2	0	18.8	27.3
10. Oxford East .....	1,702	1,069	20	1	3	21.2	15.2
11. Halton East .....	1,677	592	11	2	4	4.6	15.0
12. Ontario North .....	1,633	1,463	26	2	5	2.8	15.0
13. Welland .....	1,566	650	14	1	5	5.2	9.1
14. Dundas .....	1,486	842	31	2	2	20.8	21.0
15. Grenville .....	1,256	898	24	3	5	16.4	6.7
16. Leeds .....	1,255	782	23	0	4	20.2	8.4
17. Frontenac .....	1,228	1,159	12	2	0	15.2	4.3
18. Perth .....	1,216	925	23	0	3	20.0	7.0
19. Hastings Thurlow ..	1,154	438	19	3	2	10.7	11.6
20. Lanark .....	1,012	—196	33	6	2	20.7	9.5
21. Lennox & Addington	844	769	—10	1	3	27.0	0
22. Russell .....	815	683	—9	4	4	28.9	+12.0
23. Stormont .....	738	1,171	21	2	3	26.6	3.5
24. Simcoe Barrie .....	709	362	26	0	5	2.2	3.9
25. Prescott .....	511	1,530	2	5	3	22.4	+ .3
26. Simcoe South .....	385	1,614	18	2	—1	—6.0	8.7
Average .....	1,549	870	22	2.2	3.7	13.8	11.5

Despite an average increase in the costs of goods and services farmers buy, the cost per hundred pounds of milk was reduced in all but two associations and their increased costs were due to a change in market, rather than to poorer management. In most groups improved management was reflected in higher production per cow, less labour time per cow, more sales for the investment, or larger herds, or a combination of several of these factors.

This progress story indicates the value of an integrated programme of development research as carried on by the Branch followed through with a sound extension programme.

During the year, nine new studies were instituted, and some progress made on 22 continuing studies. Eight reports were issued on completed studies.

Requests for lectures, radio talks, newspaper articles and other extension activities occupied an increasing part of the attention of the Director and staff. Advisory work with individuals, farmers, and with farm organizations also increased materially.

As in past years, the field staff has received the fullest support of the 2,000 or more growers who have been asked to co-operate in the various studies. Only with this co-operation, can worthwhile basic data be obtained for any satisfactory analysis of farm problems.

The Branch has also enjoyed the fullest co-operation of other agencies working in the field of agricultural economics, and particularly that of the staff of the Agricultural Economics Department of the Ontario Agricultural College. The Agricultural Economics Co-ordinating Committee met regularly and conducted a very valuable two-day conference at the Ridgeway Agricultural School.

Obtaining experienced and adequately trained technical personnel continues to be a problem.

The work of the Branch for the year will be considered in greater detail under the following:

1. Statistics Division.
2. Research Activities.
3. Extension Activities and Advisory Services.

## STATISTICS DIVISION

At the commencement of the 1958-59 fiscal year, the Farm Economics and Statistics Branch assumed the responsibility of compiling and publishing statistics relating to practically all phases of agriculture in the province. This work was formerly performed by the Statistics and Publications Branch.

The collection of agricultural statistics is carried out in close co-operation with the Agriculture Division of the Dominion Bureau of Statistics in order to ensure a uniformity of statistical procedure throughout Canada, to keep to a minimum the number of schedules required to be filled out by farmers and by manufacturers of and dealers in agricultural products, and to obtain the most effective use of trained personnel. Every attempt is constantly being made to prevent duplication of effort and to achieve economy in operation. Approximately 80,000 statistical schedules are received and processed annually, and the Branch wishes to express grateful appreciation to everyone for their interest and co-operation in this work.

In 1958, the agricultural industry in Ontario reached a new peak in the amount of cash income received from the sale of farm products. The figure for 1958 is estimated at \$863,409,000 as compared with \$789,337,000 in 1957, and \$780,551,000 in 1956.

Figures for estimated cash income and total net income of farmers in Ontario, annually, from 1926 to 1968 are shown in the following table:

*CASH INCOME FROM THE SALE OF FARM PRODUCTS AND  
TOTAL NET INCOME ONTARIO, 1926-1958*

<i>Year</i>	<i>Cash Income \$ '000</i>	<i>Net Income \$ '000</i>	<i>Year</i>	<i>Cash Income \$ '000</i>	<i>Net Income \$ '000</i>	<i>Year</i>	<i>Cash Income \$ '000</i>	<i>Net Income \$ '000</i>
1926	245,868	148,513	1937	201,912	110,401	1948	650,290	366,693
1927	246,443	154,316	1938	201,156	109,496	1949	652,269	352,929
1928	259,610	155,579	1939	208,974	115,102	1950	650,083	336,637
1929	256,832	150,234	1940	215,774	113,837	1951	800,666	431,172
1930	213,471	128,459	1941	274,503	146,260	1952	770,675	431,715
1931	171,004	80,534	1942	357,848	228,239	1953	749,106	378,618
1932	131,472	50,560	1943	389,083	201,393	1954	726,397	295,040
1933	135,901	50,234	1944	410,710	253,307	1955	766,237	332,457
1934	149,922	79,024	1945	442,625	250,995	1956	780,551	313,026
1935	160,897	84,488	1946	461,733	255,706	1957	789,337	330,223
1936	176,532	83,597	1947	535,194	276,650	1958	863,409	381,043

Notwithstanding the outstanding industrial productive capacity of Ontario, this province is still the leading province in Canada in respect to agricultural production. Cash income of Ontario farmers is revealed by the Dominion Bureau of Statistics at 31.1% of that of all farmers in Canada, and is almost as great as the combined cash income of farmers in Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Manitoba and British Columbia.

Milk cows in Ontario comprise 32.4% of the total number in Canada, hogs 30.0%, sheep and lambs 22.6%, and hens and chickens 41.2%.

Ontario produces most of the winter wheat grown in Canada and stands first in the acreage planted to mixed grains, grain corn, fodder corn, dry beans, soybeans, rutabagas and tobacco; second in acreage of fall rye, hay, sugar beets and potatoes. In fruit and vegetable products, Ontario leads all other provinces by a wide margin.

This Branch of the Department of Agriculture is carrying on a continuing study of the spread existing between prices received by farmers for farm commodities and retail prices charged to consumers in the City of Toronto. The products included comprise the following: poultry, eggs, butter, cheese, milk, asparagus, strawberries, cherries, red raspberries, peaches, grapes, apples, plums, prunes, sweet corn, radishes, spinach, onions, beets, carrots, lettuce, cabbage, celery, cucumbers, tomatoes, beans, rutabagas, peppers, potatoes, and mushrooms. Several thousand farmers are co-operating in this project, and we believe the data which will be obtained from this survey will prove most valuable to government departments and to farm organizations which are making an effort to improve marketing methods for farm products. The summarized data for 1958 has not been released in published form, but the material is available to government departments and farm organizations upon request.

### Reports Published

All of the remaining statistical information gathered is published in one of four regular reports issued by the Branch. These are the Monthly Crop and Livestock Report, the Monthly Dairy Report, the Seasonal Fruit and Vegetable Report and the Branch's annual report — Agricultural Statistics for Ontario. These reports are distributed free of charge to anyone asking to have his name placed on the mailing list.

The Monthly Crop and Livestock Report is published each month from May to January inclusive. It contains timely information on a county basis relating to acreage of crops, progress of seeding, development during the growing season, yields obtained, livestock numbers, current prices obtained by farmers for their produce, weather data and other related material.

The Monthly Dairy Report, together with a March Supplement, contains statistics relating to various phases of the dairy industry. Monthly schedules are obtained from all creameries, cheese factories, dairies, ice cream manufacturers and concentrated milk plants, showing the quantities of various dairy products made and handled during the month. Tables are prepared from these schedules showing for Ontario the production, by county, of creamery butter and cheddar cheese, the sales by market area of fluid milk and cream, chocolate dairy drink, buttermilk and skim milk, and a provincial total only for the output of condensed, evaporated and powdered milk products. Other tables show the average monthly wholesale price of butter and cheese and stocks on hand at the first of each month at Toronto and the prices charged farmers for dairy feedstuffs at London and Ottawa.

The Seasonal Fruit and Vegetable Report is published monthly during the growing season. The province has been divided into fifteen regions, each having a small statistics committee consisting of Dominion and Provincial Government officials who meet on the fifteenth of each month and make up a summary of crop conditions and production prospects for their respective areas. From these regional reports, a summary for the province is prepared by the staff of the Farm Economics and Statistics Branch and then submitted for revision and approval at a monthly meeting of the Ontario Fruit and Vegetable Statistics Committee which at the present time is composed of the following members:

Jas. M. Gray, Head, Special Crops Section, Agriculture Division, Dominion Bureau of Statistics, Ottawa.

E. A. Walton, District Supervisor, Dept. of Agriculture, 35 Station St., Belleville.



- C. W. Jackson, District Supervisor, Dept. of Agriculture, Box 520, Main Post Office, Hamilton.
- R. E. Goodin, Assistant Director, Field Crops Branch, Ontario Department of Agriculture, Toronto.
- G. F. Perkin, Marketing Commissioner, Ontario Dept. of Agriculture, Toronto.
- D. E. Williams, Associate Director, Markets Branch, Ontario Dept. of Agriculture, Toronto.
- Jack McNally, Inspection Service, Ontario Dept. of Agriculture, Vineland Station.
- S. H. H. Symons, Chief, Statistics Section, Farm Economics and Statistics Branch, Ontario Dept. of Agriculture, Toronto.

### Annual Statistics Report

The Annual Statistics Report contains the latest yearly figures of production for all phases of farming and is designed to show a statistical picture of the agricultural situation in Ontario. The first part of this report shows the gross value of production and cash income from farming operations, prices received for farm produce and estimates of fruit and vegetables and dairy production. The second part shows the acreage, production and value of field crops by county division. The third part shows the estimated number and value of each class of livestock on farms by county. There are also sections showing chattel mortgages outstanding, detailed weather data, together with a summary of crop production and livestock numbers yearly for the period from 1902 to date.

### RESEARCH ACTIVITIES

Most of the studies carried on by the Branch could be classified as "development research". The objective is to obtain standards of achievement and the relationships between practices and results that will be useful to Ontario farmers in their production and marketing programs.

Each study seeks factual information regarding some particular feature of Ontario's complex agriculture and practical conclusions from an analysis of this data. Some of the information can be found in such secondary sources as the census, marketing reports, etc., but for most studies, rather extensive field surveys over a period of years are required.

Completed studies are reported to all interested parties and where the interest appears to be general, the report is published.

### Reports Published During the Year

1. Ontario Farm Management and Account Project — 1957, by J. H. Clark and H. W. Caldwell.
2. Significant Tables from D.H.I.A. — 1957, by Frank Barnes. Some material was also prepared for publication in the D.H.I.A. Progress Report 1957.
3. Peach Production Costs and Management by J. M. MacCharles. A synopsis of this report was published as O.D.A. Circular #337.
4. Turnip Production Costs and Management by J. B. Nelson and F. R. Abraham. A synopsis of this report was published as O.D.A. Circular #330.
5. Strawberry Production Costs and Management by J. B. Nelson and M. E. Peart. A synopsis of this report was published as O.D.A. Circular #342.
6. A Summary of Pear Production Costs (O.D.A. Circular #338) by J. M. MacCharles.

7. A Summary of Cherry Production Costs (O.D.A. Circular #339) by J. M. MacCharles.
8. Cheese Factory Operations by E. A. Haslett.

## STUDIES IN PROGRESS

### Dairy Herd Improvement Association Project

The Branch is responsible for the economic aspects of this permanent major departmental programme. This involves the summary and analysis of about 1,200 records annually. The data accumulated over the years now constitutes the best known body of cost information on dairy production. The annual publications are being widely used.

The farm management implication of this programme has been considered earlier in this report.

### Farm Accounting Project

In co-operation with the Department of Agricultural Economics of the Ontario Agricultural College, the Branch processes about 400 Farm Account Books each year. These records give valuable information respecting the comparative earnings of different types of farms, the factors associated with varying labour earnings and the way different enterprises fit into the whole farm business. Reports covering this project have had wide distribution among the many farmers who are making a serious study of farm management.

### Cost Studies of Livestock Enterprises

- (a) Swine Production and Management
- (b) Feeding Grain to Beef Cattle on Grass
- (c) Beef Cow and Calf Business
- (d) Feeding Steers — Yearlings vs. Calves
- (e) Raising Beef Calves

### Production Costs and Management of Feed Crops

- (a) Hay
- (b) Spring Grain
- (c) Grain Corn (Zone IV)

### Production Costs, Returns and Management of Cash Crops

- (a) Winter Wheat
- (b) Early Potatoes
- (c) Soybeans
- (d) Sugar Beets
- (e) Apples
- (f) Grain Corn in Zones I, II, III

### Marketing Studies

- (a) Seasonal Supplies and Prices of Niagara Fruits
- (b) Price Margins of Selected Ontario Farm Products
- (c) Marketing Bradford Marsh Vegetables
- (d) Analysis of Dairy Industry Statistics

- (e) Statistical Study of Norfolk County Fruits and Vegetables
- (f) Summary of Fruit and Vegetable Marketing Orders in U.S.A.
- (g) Distribution of Ontario Peaches
- (h) Marketing Ontario Apples
- (i) Potato Marketing in New York and Pennsylvania
- (j) Summary of Development of Vertical Integration in U.S.A.

#### Miscellaneous Studies

- (a) Changes in Occupied Farm Land (from 1956 Census)
- (b) Land Use Changes in Selected Ontario Townships
- (c) Organization and Returns on Mixed Beef Farms
- (d) Improved Earnings on Drained Land in Eastern Ontario

#### EXTENSION ACTIVITIES AND ADVISORY SERVICES

Since the establishment of the Branch in 1948, a highly qualified and thoroughly experienced staff has been developed and a vast quantity of economic data respecting all phases of Ontario's agriculture has been accumulated. The costs involved are fully justified only when the information obtained is made available to the farmers and others who can use it in the development of their production and marketing activities.

A considerable portion of the time of the technical staff was devoted to the preparation of published reports and press releases, to advising individuals and organizations, to public addresses, and to co-operation with the Departmental Extension workers in their local programme.

#### Published Material

On the completion of all major studies a complete report is published and distributed to all workers in the field, to co-operating growers and their organizations, and to other interested parties on request. For those interested only in the main findings, a shorter summary is usually published in sufficient quantity for general distribution.

Many studies are carried on for several years. In these cases, preliminary reports are issued at the end of each season to persons particularly interested. At the same time, all co-operating growers are supplied with a report of their own operations.

Special reports on specific subjects are continually being prepared. These often use material from several studies and other sources and are becoming more valuable as the total body of information is expanded.

The demand for all of these reports is quite extensive and is increasing each year. The total number distributed during the past year was well over 10,000.

#### Farm Business Analysis

The technique of Farm Business Analysis developed by the Branch a few years ago continues to be a basic tool in Farm Management work. The form and explanatory booklet "Sizing Up the Farm Business" are widely used not only in Ontario, but in several other Provinces as well.

#### Short Courses and Farm Management Associations

A considerable part of the County Extension programmes in Farm Management is concentrated on Short Courses and fully organized Farm Management Associations.



In most cases personnel of this Branch are invited to lecture at the Short Courses and to assist with the Association activities.

During the year the Branch supplied instructors for four Night Schools (three meetings each) and four two-day Short Courses. Speakers were also provided for 25 Farm Management Association meetings and three Farm Management tours.

Two schools for Extension Personnel were also conducted — one in Farm Accounting and one on Fruit Farm Management.

### Meetings

During the year, the Director and members of the staff addressed 78 major meetings on such subjects as agricultural situation and outlook, farm management, study findings, etc. These meetings varied all the way from local farm organizations to the national conventions of several major farm groups.

### Advisory Services

As the staff personnel becomes better known, and as the available information becomes more comprehensive, the demand for advisory services to individuals and organizations is steadily expanding.

Advice to individuals usually has to do with the management of a particular farm. One member of the staff visited 55 farms, answered 38 letters and advised 18 farmers in his own office in connection with such individual requests for advice on the management problems. Other staff members handled many similar requests.

Farm organizations, particularly of the marketing types, are continually seeking the advice of the Branch or statistical material on their particular interests. In several cases these requirements necessitated special studies which provided a valuable basis for policy decisions.

## *Farm Labor Service Branch*

The farm labor programme in Ontario is under the supervision of the "Ontario Federal-Provincial Farm Labor Committee." Members of the Committee are appointed by the Minister of Agriculture in accordance with conditions set out in the Farm Labor Agreement between the Government of Canada, represented by the Minister of Labor, and the Government of the Province of Ontario, represented by the Minister of Agriculture.

The Committee concerns itself primarily with the formation of policies and procedures to be followed in the recruitment of farm labor. It is not active in the field of farm placement.

### **Members of Committee: 1958 - 1959**

DR. C. D. GRAHAM, Deputy Minister of Agriculture for Ontario

J. W. TEMPLE, Ontario Regional Director, Canada Unemployment Insurance Commission

W. DAVISON, Agricultural Adviser, National Employment Service

J. D. McFARLANE, District Superintendent of Immigration, Canada Department of Citizenship and Immigration

J. W. DRENNAN, Markets Branch, Ontario Department of Agriculture

W. A. MONTCALM, Extension Branch, Ontario Department of Agriculture

### *Chairman:*

R. G. BENNET, Chief Agricultural Officer, Ontario Department of Agriculture.

Agriculture in Ontario experienced an outstanding year as far as the production of all types of farm crops was concerned. Practically every section of the Province showed an increase in yield and the quality also was of a high standard.

In spite of the high production, critical farm labor shortages did not occur, as might have been expected in such a situation. As indicated in previous years, there is a continuing trend toward greater mechanization, together with an increased size of farm unit which, in a large measure, alleviates critical farm labor shortages which have occurred in the past.

Favourable weather conditions at harvest time in cash crop areas, where the greatest volume of labor is required, contributed to the ease in handling the crops.

### **Sugar Beet Labor**

While mechanization is increasing in most farm operations, some crops will continue to demand a large supply of labor on a short-term basis. The Committee discussed this matter on numerous occasions during the year and agreed that every effort should be made to direct satisfactory labor to these channels when required.

This is particularly true of sugar beets. The acreage of this crop was considerably increased in 1958 over the previous year. The Committee worked closely with officials of the Canada and Dominion Sugar Company in an endeavour to secure satisfactory labor from among unskilled, unemployed workers. Some 550 were recruited and about 140 proved to be satisfactory. Some 41 Indians were recruited in Manitoba. Their employment was satisfactory for a period of time, until some discontent arose because of tribal differences.

### Tobacco Harvest Labour

The Committee also concerned itself with the procurement of labor to harvest the flue-cured tobacco crop. Here, too, an increased acreage necessitated a larger labor force. However, because of favourable weather conditions and a frost-free harvest period, the whole crop was taken off in good condition. The Committee assisted by supplying special officers in the tobacco growing area for the placement of labor during the harvesting season.

The main concern of the Committee with regard to tobacco harvesting is the reluctance on the part of growers to make their needs known sufficiently in advance to facilitate recruitment from outside the Province, if such is necessary.

### Day-By-Day Labour Service

An important function of the Committee is the operation of a "Day-by-Day" labor service for workers in fruit and vegetable crops in the Toronto area. This service is greatly appreciated by the growers of these crops and it can be said that the whole operation is carried out in a well organized manner.

During the year a total of 21,214 days work was provided, this was the highest of any season since the service was inaugurated. A payroll of approximately \$137,298.00 was involved.

It is the intention of the Committee to continue this service as long as it is required.

### STATISTICAL REPORT

	1958	1957
Maritime workers brought to Ontario .....	262	502
Prairie workers brought to Ontario .....	88	55
Ontario workers sent to Prairies .....	—	116
U.S. primers admitted to tobacco harvest .....	—	2,700
U.S. tiers admitted to tobacco harvest .....	145	—
U.S. curers admitted to tobacco harvest .....	1,964	1,305
Day-By-Day workers: West Toronto —		
Days work .....	21,214	17,569
Placements .....	636	761
Growers assisted .....	64	64



## *Field Crops Branch*

Total value of field crops in Ontario for 1958 is estimated at \$416,968,000, as compared to \$377,089,000 in 1957.

The trend towards increasing yields per acre as one means of reducing costs per unit is reflected by marked increase in yields per acre, particularly of cereal and forage crops. For instance, the ten-year average for winter wheat (1942-1951) was 29.2 bushels per acre, as compared to 33.2 bushels in 1957, and 41.2 in 1958. Likewise with oats, the 1942-1951 average was 39.1, as compared to 49.5 in 1957, and 55.2 in 1958. Barley was 32.4, as against 39 and 45 bushels for the respective years mentioned. Yields for pastures, forages and potatoes are also up substantially. For the latter the 1942-1951 average was 137 bushels per acre; 220 for 1957, and 235 bushels per acre for 1958.

All time record crops were harvested in dry beans, sugar beets, tobacco and soybeans. There has been a marked increase in attention to grass and forage crops for hay, pasture and silage.

While favourable weather conditions may be an accountable factor, improvements in soil fertility by application of commercial fertilizers, effective weed control by modern methods, introduction of Garry and Rodney varieties of oats and other superior varieties are known factors, together with management, that have shown marked results in crops. These have been developed through crop demonstrations and extension work and through activities of The Ontario Soil and Crop Improvement Association and its branches in fifty-five counties and districts.

With total cattle population in the Province at an all time high (of 2,945,000), together with an all time high for poultry, and with milk and swine production nearing a high cycle, it is significant that imports of feed grains from Western Canada show a reduction from 1,654,742 bushels in 1947 to 1,016,623 bushels in 1957, and 1,101,110 bushels in 1958. Difference in amount of subsidy paid was \$2,444,757 less in 1957, and \$1,940,789 less in 1958 than the amount of \$7,446,339 paid for the same purpose in 1947.

Departmental assistance and promotion through the Field Crops Branch is designed to increase yields per acre, improve quality, and provide more economical production per acre. This is done through six main channels:

- (1) Pedigreed seed — Adequate seed supplies are maintained through 1,593 seed growers, 450 seed cleaning plants, and 37 seed shows. Exports of pedigreed seed oats and wheat have exceeded a million bushels annually.
- (2) Introduction and use of higher yielding varieties — This is stimulated by the Soil and Crop demonstration programme and through the promotion and management of high yield competitions.
- (3) Transportation assistance on agricultural limestone.
- (4) Administration of the Weed Control Act; weed control practices including chemicals, and grants to municipalities for weed control purposes.
- (5) Promotion of improved farm practices through grants to fifty-six branches of The Ontario Soil and Crop Improvement Association.
- (6) Educational — conventions, meetings, field days, etc.

### Agricultural Limestone Assistance Policy

The co-operative plan between railways and the Federal and Provincial Departments of Agriculture inaugurated in the early thirties was continued with revision of policy. During these years movement of agricultural limestone has shown a marked increase from 110 cars in 1936 to 200 cars in 1958, plus 35,991 tons moved by truck. A policy to provide assistance for truck movement became effective in 1945, when 765 tons were moved. Total tonnage has increased from 4,471 tons in 1939 to 44,528 in 1958. Counties to take most advantage of assistance are as follows: Welland 4,809 tons; Kent 4,521; Lincoln 3,712; Haldimand 3,417; Wentworth 2,901; Prescott 2,397; Elgin 2,127; Sudbury 1,652; Parry Sound 1,612; North Simcoe 847; Algoma 800; Muskoka 569, and Temiskaming 491.

Rates of assistance, which increased the subsidy by 50 cents per ton, or a maximum of \$2.50 per ton, in Old Ontario and made 75 per cent of the reduced freight available for all sections of Northern Ontario, were revised and became effective April 1, 1958.

The Agricultural Limestone Committee continued to meet regularly to approve sources of production, review policy, plan demonstrations, and, generally, to keep in close touch with all aspects of the need and current situation in connection with correction of soil acidity.

### Seed Drill Survey

One fifth of the Province is covered each year. Thus, each area gets at least one survey during each five-year period. The area for 1958 was the Eastern Counties of Carleton, Dundas, Frontenac, Glengarry, Grenville, Lanark, Leeds, Prescott, Renfrew, Russell and Stormont. Some 746 samples of grain and small seeds were collected direct from seed drills. All samples were analyzed by the Plant Products Division of the Canada Department of Agriculture and results compiled by the Field Crops Branch. Data are used to act as a guide for farmers, seedsmen and extension workers. The following comparisons of former surveys are of interest:

#### ONTARIO SURVEYS

<i>Year</i>	<i>Area</i>	<i>No. 1%</i>	<i>No. 2%</i>	<i>No. 3%</i>	<i>Rejected %</i>	<i>Treated %</i>
1958	Eastern	49	10	10	31	37
1957	Southern	55	12	13	20	78
1956	Northern	53	12	10	25	19
1955	W. and S.W.	59	12	9	20	69

#### EASTERN ONTARIO SURVEYS

1945.....	38	16	11	35	27
1953.....	41	10	12	37	40
1958.....	49	10	10	31	37

This survey shows some improvement for the Eastern area, but as one sample in three is "rejected" grade there remains much to be desired. It is of interest to note that one sample of oats had as high as 3,280 weed seeds per pound, one sample of small seeds had 2,155 yellow rocket seeds in each ounce, and two samples had germination of less than 25 per cent. 330 samples, or 62 per cent, were cleaned in power units, and 197, or 38 per cent, were cleaned on farms or had no cleaning before seeding. Power cleaners show 63 per cent as No. 1 grade or better, while farm cleaned samples were found to be 68 per cent of "rejected" grade. 37.3 per cent of all samples were treated for seed borne diseases. From tests made on yields of oats infested with mustard, an oat crop was reduced from 68.2 bushels per acre to

49.8 or 26.9 bushels per acre. It is encouraging to note that 20 per cent of all samples were totally free from weeds. This indicates that better farmers are using registered seed. On the other hand, the fact that 31 per cent were classified as "rejected" points to some farmers who are not weed conscious, but rather indifferent to the harm they are doing themselves and their communities.

### Major Seed Shows

After thirty-five annual International Grain and Hay Shows the event was cancelled for 1958.

Some 502 prizes in field crops were won by Ontario farmers at the 1958 Royal Agricultural Winter Fair. Major winners were as follows:

#### WORLD CHAMPIONSHIP

Soybeans (Harosoy)	Lawrence R. Bostwick, Wheatley
Hay	Robert P. Allen, Brucefield

#### INTERNATIONAL AWARD

Seed Potatoes (Keswick)	Allan Ryan, Charlton
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#### CHAMPIONSHIP

Peas (Chancellor)	John Neubauer, Hespeler
Beans (Sanilac)	Robert P. Allen, Brucefield
Turnips (Laurentian)	J. R. Pollock, Keswick

#### RESERVE CHAMPIONSHIP

Oats (Garry)	J. M. Hanbidge, Dobbinton
Rye (Tetra Petkus)	Alex M. Stewart & Son, Ailsa Craig
Peas (Blue Maple)	Carl Peacock, Stayner
Beans (Sanilac)	Bob Fotheringham, Seaforth
Soybeans (Harosoy)	Camille Dupuis, R.R. 1, Tilbury
Grass Seed (Climax)	R. Chambers, Fenwick

### The Ontario Soil and Crop Improvement Association

Fifty-six branches, with their 1,261 officers and directors and co-operators, carried on 451 projects, including field projects and seed fairs. A total of \$22,435 was paid in the form of grants from the Field Crops Branch, or an average of \$400.63 per branch. A few branches celebrated their twentieth anniversary this year. North Simcoe County had the largest paid membership, of 425. York had probably the largest annual branch meeting, with over 300 out by 10.00 a.m. A sunrise tour of projects starting at 8.00 a.m. attracted 165 people in sixty cars.

The fifth good will tour was organized in co-operation with the Canadian National Railways. One hundred men and women visited Quebec.

High yield potato clubs, first organized in 1943, continued to attract interest, with nine 500 Bushel Potato Clubs operating in 1958 and a total of 147 contestants. Yields of over 800 bushels per acre were recorded on the farms of two contestants, both with the Huron variety. There were twenty-two entries of this variety, with an average estimated yield of 536 bushels per acre. Fifty-five contestants had over 500 bushels per acre. Durham County club, with seventeen members, had the highest average yield, with 506 bushels per acre.



In the case of the High Yield Soybean Contest, first organized in 1946, there were fifty-five contestants in three zones. This contest has been sponsored annually by Toronto Elevators and Victory Soya Mills. Provincial winners were as follows:

- (1) Neil Monroe, Glencoe
- (2) Robert Stoltz, Pelee Island
- (3) Pioneer Hybrid Corn Co., Scudder.

Since high yield competitions first got under way in 1943 objectives have been set through county and provincial contests for various crops, including oats, barley, winter wheat, corn, turnips, etc. The latest development by way of organizing the first Ontario Pasture Improvement Contest in 1958 is of significant interest, as for many years pasture has been regarded as our most important, yet neglected, crop. A total of 361 entries, representing twenty-four counties and one district, was indicative of enthusiastic reception. In addition to prizes for four areas, a trophy for the champion and prize money for Provincial winners were provided by the Canadian Seed Trade Association. Winners were as follows:

- (1) Hugh Blaine, Mountain (Dundas County)
- (2) Mac Logan, R.R. 4, Woodstock (Oxford County)
- (3) Roy Brothers, Londesboro (Huron County)
- (4) Clarence Sims, Cameron (Victoria County).

This contest was such an outstanding success that there are prospects a number of entries will be more than doubled in 1959.

This association is represented on a number of committees and boards as well as national and international organizations. In addition, committees are set up to deal with specific responsibilities. These include the Seed Marketing and Publicity and Registered Seed, Potato and Turnip Committees. In the first instance 1,593 registered seed growers provide supplies for domestic markets. In addition, over one million bushels are exported annually. New varieties and cultural and marketing practices are of prime importance at all times, but seed growers are concerned this year with two problems in particular: first, with negotiations with the Wheat Marketing Board for exemption from Board regulations, and, second, with recommendations for drafting the new Canada Seeds Act.

The Potato Committee works closely with the Ontario Potato Growers Association in a wide variety of mutual interests and activities. Standards and quality for grades have been given constant attention, resulting in changes, trade and consumer surveys have been made, and production factors have been negotiated. Progress has been made by import protection and development of potato processing.

As with other committees, the Turnip Committee is made up of growers, shippers, and officials representing various aspects of the industry. Every attempt is made to develop and maintain close liaison. Progress has been made in development of quality by a vigorous extension programme to use pedigree, sized and treated seed of the Laurentian variety, followed by preventative measures for insect and disease control. Results are an expanding domestic table turnip market with exports remaining steady.

### Seed Fairs

County and district seed fairs are continuing to increase in popularity. In addition to grower competition in seed classes, almost every event is highlighted

by a lively programme dealing in a practical manner with crop subjects. A summary for 1958 is as follows:

Number of Seed Fairs .....	37
Total Prize Money Paid .....	\$12,745.30
Total Exhibitors .....	1,438
Total Entries .....	4,689
Total Attendance .....over	21,000
Total Prize Money .....	\$12,745.30
Cereal Seed Offered for Sale .....	57,225 bushels
Forage Seed Offered for Sale .....	22,745 pounds
Potatoes Offered for Sale .....	14,820 75-pound bags

A maximum annual grant of one hundred dollars is available for local seed fairs through county and district Soil and Crop Improvement Associations. In addition, grants were provided for district seed shows as follows:

Ottawa Valley .....	\$400.00
Middlesex District Seed Show .....	400.00
Central Ontario Spring Show .....	400.00

The Ontario Soil and Crop Improvement Association enjoys membership or representation on many boards and organizations. These include the Ontario Federation of Agriculture, Ontario Conservation Council, Advisory Fertilizer Board for Ontario, Ontario Potato Growers Association, Royal Agricultural Winter Fair, Western Fair Association, Ontario Beef Pasture Improvement Committee, Canadian Horticultural Council, Canadian Potato Industry Conference, and others.

For the encouragement of juniors and recognition of achievement, the Provincial Association provides the following

4-H Grain Club Challenge Trophy (Ontario Championship)

4-H Potato Club Challenge Trophy (Ontario Championship)

Championship awards in Agronomy sections at Ontario Agricultural College, Guelph; Western Ontario Agricultural School, Ridgetown, and Kemptville Agricultural School.

In addition, many seed fairs also have classes and competitions for juniors.

## WEED CONTROL

### Field Crops

The 1958 season was not conducive to optimum results from chemical weed control. Cold, dry weather retarded growth, and constant high winds made accurate spray application exceedingly difficult.

A survey shows that approximately 7,000 acres were treated pre-emergent, most of which was corn. Results were variable. There was an increase in the acreage of cereals treated with 2,4-D type of herbicide. There is still a large acreage of untreated mustard. The reason for this is hard to explain, since the treatment is foolproof, low cost, and safe on corn, cereals, flax, and most under-seeded legumes. The acreage of treated pastures is not increasing, although numerous demonstrations point the way to low cost improvement of natural pastures with chemical weed control.

TABLE I  
CROP ACREAGES SPRAYED FOR WEED CONTROL

	<i>Cereals</i>	<i>Corn</i>	<i>Pasture</i>	<i>Pre-Em.</i>	<i>Veg.</i>	<i>Misc.</i>	<i>Total</i>
W. Ont. ....	113,000	10,800	5,053	2,335	700	-----	131,885
Niagara .....	15,709	6,744	1,954	961	1,210	250	26,828
S.W. Ont. ....	23,600	112,325	250	2,400	150	-----	138,725
Central .....	37,366	4,639	1,047	1,077	990	450	45,569
Eastern .....	34,122	3,440	2,017	285	-----	628	40,492
Northern .....	8,332	-----	-----	-----	-----	-----	8,332
Province .....	232,129	137,948	10,321	7,058	3,050	1,328	391,831

### Roadsides

Improvement and extension of roadside weed control continues steadily. Popularity of mowing is increasing.

TABLE II  
ROADSIDE WEED CONTROL

	<i>Mileage Sprayed</i>	<i>Mileage Mowed</i>
Provincial Highways .....	4,892	-----
County Roads .....	5,988	7,569
Township Roads .....	15,176	20,816
Suburban, City, Town, Village .....	1,091	2,580
Province .....	27,147	30,965

### Herbicide Damage

Evaluators of herbicide damage to crops were appointed for the second year in an effort to have available an independent arbiter of claims. In conjunction with this, more aggressive publicity on care with herbicides was carried out. Posters to warn users of herbicides of susceptible crops were prepared, and about 5,000 were distributed, chiefly in the canning crop areas. Twenty-five claims were investigated and appraisals completed on twenty-one. Crops involved were sugar beets, soybeans, grapes, tobacco, tomatoes, cauliflower, strawberries, pears, apples. Total crop value already appraised equals \$10,930. Claims involving strawberries were caused by an accident at an oil refinery, and to apples by the laying of a sewer pipe — no relation to herbicide damage. Municipal and highway weed spraying, spraying on public utility rights-of-way, and several cases of farmers crop spraying were the agencies responsible for the damage.

### Barberry and Buckthorn

A policy of assistance in the eradication of barberry and buckthorn of fifty per cent of the cost of chemicals up to \$600.00 to a county in any one year is in effect. This year eighteen counties participated. Most common methods are basal bark spray, stump treatment, or foliage treatment on regrowth. In practice, the county usually provides the chemicals and claims its fifty per cent subsidy up to \$600.00.

### Leafy Spurge and Knapweed

A similar policy to barberry and buckthorn is in effect for leafy spurge and knapweed, with a fifty per cent subsidy for materials up to \$250.00. Several counties are working on the eradication of leafy spurge with annual treatments of 2,4-D or brushkiller type of chemical.



### Publications

"Guide to Chemical Weed Control", four sections, is revised annually and distributed by direct mail to over 3,000 sprayer operators. It is also made available through county weed inspectors, county agricultural offices, the Information Branch, and distributors of herbicides and sprayers. Other publications include "Weeds of Ontario", "Barberry and Buckthorn", "Poison Ivy", "Ragweed", "Leafy Spurge" and "Plants Poisonous to Livestock".

### Press Releases

The "Weed of the Week" series from May to September received the usual wide acceptance in the press; also on numerous radio and television programmes.

### Meetings

Twenty county spray schools were held throughout the Province during the spring season. This type of service was continued mainly to familiarize farmers with new equipment in pumps, nozzles and booms, and to emphasize the importance of higher gallonage required in pre-emergent spraying.

A two-day weed short course was held in January in Northumberland County, with forty farmers in attendance. Topics covered were weed identification, chemical weed control, sprayer operation, and cultural weed control.

A two-day conference for county weed inspectors was held July 3 and 4 at the Ontario Agricultural College. These dates were selected in order to give the group a chance to visit experimental work at the College and in the vicinity.

### Seed Cleaning Plants

A total of 425 seed cleaning plants were licensed in 1958. Comparative figures are 441 in 1957; 435 in 1956, and 453 in 1955. During 1958, 106 plants were visited on an inspection basis, and approximately 64 other calls were made to help with problems or to give information. One hundred of these were custom cleaning cereals, and the remainder were plants doing work on forage seeds alone.

Basic equipment in the 106 plants consisted of:

two screen cleaners .....	75 plants
three screen cleaners .....	18 plants
four screen cleaners .....	12 plants
five screen cleaners .....	1 plant
scourer or debearder .....	80 plants
carter disc or indent cylinder .....	47 plants
treaters .....	76 plants,
including 11 dust applicators.	

Very few scourers were set up with variable speed pulleys, and this lessens the efficiency of the operation. Several of the Carter discs were not being used due to low capacity, or the operator considered it an extra cost which his charges would not cover.

Although liquid type seed treaters are considered a must in most of the Province, they are very scarce in the North and East. Of the 76 plants using treaters, eleven were using a dust applicator, which does not give as good a seed coverage, and in most cases is hazardous to the operator.

Although screens are becoming more expensive each year, sixteen plants did not have satisfactory storage for screens. This leads to damaged screens, and often a screen of "nearly" the same size is used if the right one is not handy.

Weed disposal was considered satisfactory at 73 plants. Of the balance, most were sending all refuse home with the farmer. Twenty operators were carrying on seed cleaning too close to grinding operations. Some cases were noted of the same elevators being used for feed and seed. The use of a receiving separator as a cleaner was discouraged at two operations.

Prices ranged from a low of thirty cents per cwt. to clean and treat to sixty cents per cwt. for the same operation. The price of twenty to twenty-five cents per cwt. to clean and ten cents per bushel to treat appeared average.

Grants for the establishment of seed cleaning plants and installation of equipment were discontinued in 1956.

The second annual seed processors short course was held in the new Field Crops Research Laboratory at the Ontario Agricultural College. It was organized by the Field Crops Branch in co-operation with the Field Husbandry Department.

Registration was limited to sixty owners and operators. Two full days were spent in lectures, panels, discussions, demonstrations, and actual machine operation. The event was an outstanding success.

### Potatoes

Acreage for 1958 was estimated at 56,500, with total production 6,579,000 cwt. This amounts to about one sixth for Canada, but normal annual value is often one third of the whole Canadian potato crop. Over one third of the consumers reside in this province.

There were 8,620 carloads of potatoes brought into the Province during the calendar year of 1958. In the same period 738 carloads were shipped out. The following carlot movement from Ontario went to destinations as follows: Newfoundland 40; Nova Scotia 53; New Brunswick 24; Quebec 46; Manitoba 48; Saskatchewan 3; Alberta 3, and U.S.A. 89. It is also of interest to note that carlot rail movement to the Province is recorded as follows: from P.E.I. 5,333; New Brunswick 2,529; Quebec 12; Manitoba 6; Alberta 1, and British Columbia 1. The records do not include large quantities moved from Manitoba, particularly to Northern Ontario, and movement from Quebec, particularly to Eastern Ontario. In addition, it is worthy to note that increased quantities of instant, dehydrated, granule, frozen French fries, patties, puffs, chips, potato flour and other processed potato products are being used. Accurate statistics of imports into the Province are not available, but it is recognized that quantities have increased tremendously, particularly in the past year.

In 1958 potato growers in Ontario had their share of disappointments. Early in the year there were high hopes for substantial price increases. Predictions seemed to be firmly based on crop reports, shipments, supplies on hand and prospective demands. Although markets lacked life for most of the entire season, there was slight strength only for a few weeks in late winter; but, in the meantime, growers and speculators were hopeful of substantial increases, which did not materialize. By April prices had drastically declined, and did not recover.

The situation of late winter and early spring affected planting and marketing of the 1958 crop in Ontario. Early growers planted above average acreage based on the hope that all supplies of old potatoes would be long since off the market before

the new crop was ready, and, because of freezеоffs, new potatoes from the South would be in short supply when the tariff of 37½ cents became effective beginning June 15. Again there were disappointments. Old potatoes continued to be available in quantity at moderate prices, many from modern controlled temperature storages or treated with maleic hydrazide. Further, because the United States' Southern crop through repeated late plantings had been delayed, ample supplies became available just at a time when our growers and dealers were not only prepared to take care of domestic requirements, but also provide supplies for outside markets in other parts of Canada and the United States. And so the marketing season started out very draggy at low prices for the second year in succession.

Like the one time farm flock of poultry, the small acreage commercial potato grower is fast disappearing. In the spring of 1958 a survey in one community revealed that seventy-two potato growers had an average of over thirty-six acres this year, with several growing from 40 to 150 acres. There are now machines to do every job from cutting seed to packaging the finished product in record time.

The Ontario Potato Growers Association continues to function. Organized in 1954, bylaws provide for twenty-three directors elected to represent all sections of the Province. These represent local units, of which there are now fourteen. There are fourteen basic objectives in the bylaws.

Sebago is taking over as a main crop late potato, replacing Katahdin. The Canso has almost entirely disappeared, but Keswick and Kennebec have increased in popularity. Huron was licensed and introduced for the first time in 1957. It is scab resistant. Unfortunately, some growers continue to grow the Ontario variety because of its scab resistance. Its extremely poor quality, particularly after the last of August, has had a distinct detrimental effect on the Ontario potato industry. For this reason it is not now licensed for sale as seed in Canada.

There is continuing interest and enthusiasm in high yield potato clubs, commonly known as 500 or 600 Bushel Potato Clubs. The average yield for 147 growers completing the 1958 contest was 455 bushels. Average per cent dry matter for 104 was 18.7 per cent. Durham County had the highest average yield, of 510 bushels per acre, and dry matter 20.2 per cent, for seventeen contestants. The record for the Province is 897 bushels per acre.

The bacterial ring rot problem is being held in check by regulations under the Plant Diseases Act. A service of inspection of commercial fields is provided without charge, and inspectors attempt to carefully check all fields. The whole policy was revised during the year. All supplies must now be disposed of by March 15 instead of January 31, a complete report made to the Department, all storages, bags, bins, etc. properly disinfected, and new seed obtained from an approved source. In 1953 it was necessary to enforce the Act by eight prosecutions. However, the number of cases on farms across Ontario has been reduced from 673 in 1946 to 89 in 1956. A total of 158 cases were reported in 1958, involving 2,479 acres.

There is also a seed potato restricted area under the Seed Potatoes Act. It includes about eighty growers who petitioned their local township for a bylaw to govern the planting, transportation and distribution of potatoes in the area. Since 1950 all have been required to plant only foundation or certified grade, all crops are officially inspected for seed, and there is also some control over disinfection and distribution of used bags.

A list of seed growers for the Province is made available without charge.

Effective September 1 of last year new grade standards were adopted under the Farm Products Grades and Sales Act for the Province of Ontario. These are Ontario No. 1, Ontario No. 1 Large, Ontario No. 1 Small and Ontario No. 2. These apply



to potatoes grown and used within the Province, but any shipments outside of the Province must, of course, comply with grades established under the Fruit, Vegetables and Honey Act and require the prefix "Canada". The new grades for regular varieties under Ontario No. 1 require potatoes to be two inches to  $3\frac{1}{2}$  inches with 75 per cent of potatoes in any package at least  $2\frac{1}{4}$  inches. The size for Ontario No. 1 Large grade is  $3\frac{1}{4}$  inches minimum, and Ontario No. 1 Small is  $1\frac{3}{4}$  inches to  $2\frac{1}{4}$  inches, commencing September 1 in the year in which grown and may only be used for washed potatoes in five-pound or ten-pound transparent containers.

Consumer survey was taken as to preference, and 72 per cent from a total of over 900 preferred the size and quality of Ontario No. 1 potatoes above Canada No. 1.

These new grades were approved at the request of growers and the trade after an extensive survey of wholesalers, retailers, processors and consumers.

Growers are making progress by producing potatoes higher in dry matter and handling them in a more efficient manner. In order to provide more constant supplies of a quality product at the time and place required, growers are providing themselves with additional storage and packaging facilities.

In co-operation with the Departments of Health and Reform Institutions large quantities of seed were secured for their branch farms for the sixteenth consecutive year.

An active part was taken in the second Canadian Potato Industry Conference at Fredericton, New Brunswick, the Canadian Horticultural Council and Salad Week.

### Turnips

Perhaps the most important factors to be recorded concern interest in application of chemicals for insect control, use of mechanical harvesters, improved packaging, and the trend towards processing.

Promotion was continued on uses and increased outlets, with exhibits at many major shows, including the Royal Agricultural Winter Fair, International Trade Show, and Restaurant Association. Several press releases were prepared at timely periods throughout the year.

### Pedigreed Seed and Foundation Seed Distribution

In addition to greatly increased demand locally for pedigreed seed, processed and treated, export markets took 328,000 bushels of winter wheat and 265,000 bushels of oats. There was keen demand for Rodney and Garry varieties of oats. The number of registered seed growers at May 1, 1958, total 1,593. Lists of seed for sale were prepared and widely distributed. In addition to fall seeded crops, 5,000 copies of a booklet were distributed listing seeds for spring crops as follows: 93,000 bushels of cereal seeds, 11,000 pounds of forage seeds, and the progeny of foundation seed potatoes from 985 acres. Assistance was provided in revision and distribution of 35,000 copies of "Field Crop Recommendations", some 10,000 copies of "Corn Variety Recommendations", and 11,000 copies of a 121-page booklet giving addresses and proceedings of the annual convention of The Ontario Soil and Crop Improvement Association.

Beginning this year, all corn is now sold as certified rather than registered, standards being the same. All seed corn in Ontario was graded and tagged by dealers. Pedigree tags are prepared by the Plant Products and sent out in numbers as requested. Original seed is collected and grown beside tagged samples of the same

variety. This will determine any misnaming or off-types. It is expected that this system will encourage the maintenance of both quality and purity standards.

A Foundation Seed Committee allocates available supplies to elite and apprentice growers.

#### **The Canadian Forage Seeds Project**

Standards, the allocation of foundation stock and production problems are responsibilities of this Federal-Provincial co-ordinating committee.

Lasalle red clover production has moved mostly to the West. Only a small amount of the reported 150,000 pounds of sealed seed in Canada was grown in Ontario.

Of the 1,150,000 pounds of sealed Climax timothy, about two-thirds was produced in Ontario, being over twice the production of the previous year.

## *Information Branch*

The programme of the Information Branch is designed to provide information of value to the producers and consumers of Ontario farm products, and to Department extension personnel.

The Information Branch secures information from all branches and institutions of the Department, and other sources. The Branch uses all media in carrying out its information programme.

### News Releases

A weekly news release service provides useful agricultural information to the editors of Ontario weekly newspapers, daily newspapers, radio stations, television stations, farm magazines, and other publications. During the year 227 separate news releases were provided through this weekly news release service to each of 830 editors, writers, and agricultural specialists.

### Radio Service

A monthly radio service provided a total of 160 separate programmes to 38 Ontario radio stations requesting the service. The persons featured on the programmes were drawn from various branches and institutions of the Ontario Department of Agriculture.

The scripts for all radio programmes were sent to all extension personnel for their information.

### Television

The Branch arranged for the appearance of Department personnel on Ontario television stations during the year, and laid plans for the establishment of a film service for Ontario television stations. A sound-on-film camera was purchased for this purpose.

### Publications

The publications programme of the Department is under the direction of the Department Publications Committee, with the Director of the Branch acting as chairman:

During the year the following publications were printed:

<i>Circulars</i>	<i>Number</i>
#179 Factors which Influence the Butterfat Test of Milk .....	5,000
#180 Factors which Influence the Butterfat Test of Farm Separated Cream ....	500
#301 Fertilizer Recommendations for Potatoes Grown on Mineral Soils .....	5,000
#302 Fertilizers for Vegetable Crops Grown on Organic Soils .....	5,000
#304 Fertilizer Recommendations for Cereal, Hay and Pasture Crops .....	25,000
#310 Turnip Protection Guide .....	
#329 Control of Insects and Diseases of Cereal Crops, Forage and Hay, Legume Seed Crops .....	4,000
#330 Turnip Production Costs .....	5,000
#331 Efficient and Safe Operation of the Corn Picker .....	5,000



#333	Drainage System Repair Recommendations .....	500
#334	Dwarf Trees for Orchard Use .....	5,000
#335	Whitewash .....	2,000
#336	Paving on the Farm .....	1,000
#337	Peach Production Costs .....	5,000
#338	Pear Production Costs .....	5,000
#339	Cherry Production Costs .....	5,000
#340	Ontario Guide to Vegetable Varieties .....	2,500
#342	Strawberry Production Costs .....	5,000
#343	The Meat Barbecue .....	5,000
#344	Chemical Thinning of Apples .....	2,500
#345	Birdsfoot Trefoil .....	3,000
#346	Rhubarb Forcing .....	5,000
#347	Cucumbers .....	5,000
#348	Asparagus .....	5,000
#349	Snap Beans .....	5,000
#350	Mushroom Culture .....	2,000
	Farming is a Hazardous Occupation .....	5,000
	More Birdsfoot Trefoil in Ontario .....	3,000
	Fertilizer Recommendations for Tobacco .....	20,000
	Supplement to Bulletin 478 — Bacterial Diseases of Plants .....	5,000
# 75A	Guide to Chemical Weed Control in Field Crops .....	11,000
# 75B	Guide to Chemical Weed Control in Horticultural Crops .....	2,000
# 75C	Guide to Chemical Weed Control on Roadsides and Waste Places .....	7,000
# 75D	Guide to Herbicides Used in Chemical Weed Control .....	8,000
#296	Field Crop Recommendations for Ontario 1959 .....	35,000
#312	Pest Control Chart for Ornamentals in the Home Garden .....	5,000
#332	The Dehorning of Cattle .....	10,000
#341	Resazurin and Methylene Blue Reduction Tests .....	5,000

*Leaflet*

Vegetable Garden Requirements .....	15,000
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*Reports*

	<i>Number</i>
Report of Horticultural Experiment Station — Vineland .....	10,000
Report of Ontario Soil and Crop Improvement Association for 1958 .....	10,000
46th Annual Report of Ontario Plowmen's Association .....	1,000
104th Annual Report of Ontario Horticultural Association .....	4,000
104th Annual Report of Ontario Agricultural Societies .....	3,000
Report of the Minister of Agriculture .....	2,000
Report of Entomological Society .....	1,500
Report of Ontario Agricultural College .....	1,000
Report of Ontario Veterinary College .....	2,000
Report of Stallion Enrolment Board of Ontario .....	500

*Bulletins*

	<i>Number</i>
#430 Fruit Varieties .....	10,000
#448 Lawns .....	10,000
#456 Dwarf Apple and Pear Trees .....	10,000
#466 Salads — All the Year 'Round .....	10,000
#468 Canning Ontario's Fruits and Vegetables .....	20,000
#470 Your Money's Worth in Food .....	20,000
#479 Supper Dishes .....	10,000
#504 Frozen Foods .....	20,000

*Miscellaneous*

	<i>Number</i>
Ontario Farm Account Book .....	14,000
Kemptville Agricultural School Calendar 1958-59 .....	2,750
Ont. Soil Survey Report #25 — Victoria County .....	3,000

## *Junior Farmer Loan Branch*

This Branch of the Department of Agriculture provides the staff of The Ontario Junior Farmer Establishment Loan Corporation. This Crown Company makes loans to young farmers by authority of The Junior Farmers Establishment Act 1952.

The Corporation is composed of three members who are officers of the Public Service of Ontario as follows:

<i>Chairman</i> .....	MR. E. I. McLoughry
<i>Vice-Chairman</i> .....	MR. W. C. BROWNING
<i>Director</i> .....	MR. J. B. NELSON

The full-time employees number twenty-eight, made up of nineteen women and nine men including three agriculturalists and four lawyers. There is also a field staff of sixteen inspectors employed on a per diem basis for appraisal and supervision work.

In the fiscal year ending March 31, 1959, there were 855 applications received and 578 loans approved bringing the total number of approvals to 3,202 and the amount approved to \$22,756,134.00. During the past year principal repayments amounted to \$1,106,283.78 including 91 loans paid off. No farms were taken over in this period.

A limited amount of supervision in connection with loans granted by the Corporation is being done by the field staff under the direction of the Supervisor of Loans. This service is being provided to assist mortgagors who may have difficulty becoming established, and to obtain information which will be useful to the Board in considering future applications. Progress reports on 553 loans were completed during the fiscal year ending March 31, 1959. Most of this work is done in the off seasons when the field staff is not busy with appraisals. Due to the unusual amount of snow in the past winter, it was not possible to carry out as much supervision work as would normally have been done.

At the year end there were only 71 loans in arrears. Collections to date have not been a serious problem. This is due mainly to the great care exercised in granting loans to see that each applicant is well qualified as a farmer and a good moral risk. It is also considered important that the farm offered as security is suitable for the type of farming to be followed and that the applicant's debt ratio is economically sound. In borderline cases it is not unusual to have more than one inspector report independently.

Extensions are given only on compassionate grounds. In these cases every effort is made to help the borrowers with wise counsel and sympathetic understanding.

The field staff is well qualified by practical experience and special training. Every effort is made to give prompt service and to maintain good public relations. Letters on file indicate that the desired result has been accomplished.

## *Markets Branch*

During the year the name of the Co-operation and Markets Branch was shortened to the Markets Branch. In addition the Markets Branch and the Fruit Branch were combined with the work of the Fruit Branch continued as the Farm Products Inspection Service. As a result the Markets Branch now administers the regulations approved under The Farm Products Marketing Act, The Farm Products Containers Act, The Co-operative Loans Act, The Farm Products Grades and Sales Act and The Plant Diseases Act. In addition the Markets Branch is administering The Grain Elevator Storage Act passed at the 1958 Session of the Legislature. The Commissioner of Marketing is also Chairman of the Ontario Food Terminal Board administering The Ontario Food Terminal Act.

### THE FARM PRODUCTS MARKETING ACT

The highlights of the year were the amendments made to the Farm Products Marketing Act during the 1959 Session of the Ontario Legislature, the plebiscite on the continuation of the Essex-Kent Sett Onion Growers' Marketing Plan, the plebiscite on the continuation of the Ontario Fresh Peach Growers' Marketing Plan, court references in connection with the Ontario Hog Producers' Marketing Plan and the plebiscite on the proposed Ontario Tender Fruit Growers' Marketing-for-Processing Plan.

The 1959 amendments to the Farm Products Marketing Act provide for similar procedures as in the Ontario Elections Act to deal with irregularities in the conduct of plebiscites of producers. Payment of returns to producers through local boards and marketing agencies and deductions of producer licence fees and service charges by local boards and marketing agencies was approved. This had been the practice for several years but was not authorized legally until this year. The purchase or otherwise acquiring quantities of the regulated product by marketing agencies was approved. The Farm Products Marketing Board was empowered to limit the powers of a local board or marketing agency through authority approved to revoke any regulation, order or direction of a local board or marketing agency.

Due to disagreement among the producers over the usefulness of the Essex-Kent Sett Onion Growers' Marketing Plan as a result of a disastrous marketing season in 1957 and a petition representing all of the growers in Kent County that they be exempted from the plan the Board announced a plebiscite would be taken on the question of continuation of the plan. The vote was held on June 24th, 1958. Of the 219 growers eligible to vote, 28 growers voted in favour of continuing the plan and 95 growers voted against continuing the plan. The remaining growers did not vote. Since the number voting in favour (22.7%) was less than 66-2/3% of those voting, the Board announced the plan would be revoked as soon as the affairs of the local board were wound up.

As reviewed in previous annual reports The Winter-Celery Growers' Marketing Plan had not operated for the past three years due to the decline of this industry in Ontario because of the development of new varieties which made available a supply of fresh celery imported from the United States on the market throughout the year. In addition, the Ontario Honey Producers' Marketing Plan had never come into operation since approval in 1950 for the reason the petitioners felt it necessary to regulate the marketing of all honey sold in Ontario regardless of where



produced. The Farm Products Marketing Act, however, only provides authority for regulating the marketing of farm products produced in the Province. In the meantime the production of honey in Ontario had declined to the point where no honey marketing problem now exists. During April, 1955, the Board, following receipt of a petition requesting the vote, conducted a plebiscite on the continuation of the Bradford Marsh Fresh-vegetable Growers' Marketing Plan, which indicated the majority were opposed. In order to give the local boards concerned in connection with these three plans an opportunity to wind up their affairs and dispose of their assets the plans were permitted to continue in force until this year although the regulations were revoked at the time they ceased to operate. Since these matters have now all been determined these three plans were recommended for revocation during the year under review which is being done.

As a result there are now fourteen plans in force covering twenty-six crops. The plans in operation and the year each was approved are as follows:

- The Ontario Asparagus Growers' Marketing Plan, 1938
- The Ontario Pear, Plum and Cherry Growers' Marketing Plan, 1938
- The Ontario Peach Growers' Marketing Plan, 1938
- The Ontario Sugar-Beet Growers' Marketing Plan, 1942
- The Ontario Seed-Corn Growers' Marketing Plan, 1942
- The Ontario Berry Growers' Marketing Plan, 1944
- The Ontario Bean Growers' Marketing Plan, 1944
- The Ontario Vegetable Growers' Marketing Plan, 1946
- The Ontario Hog Producers' Marketing Plan, 1946
- The Ontario Grape Growers' Marketing Plan, 1947
- The Ontario Soya-Bean Growers' Marketing Plan, 1949
- The Ontario Fresh-Peach Growers' Marketing Plan, 1954
- The Ontario Flue-Cured Tobacco Growers' Marketing Plan, 1957, and
- The Ontario Wheat Producers' Marketing Plan, 1958.

A marketing plan is comprised of two parts. Part 1 is the plan. The plan is approved by the Lieutenant-Governor in Council on the recommendation of the Minister of Agriculture. The plan is the "dry bones of the law". The plan constitutes the producer marketing board as the local board to administer the plan. It provides for the method by which the local board is to be elected. It defines the farm product or products to be regulated under the plan and the portions, if any, of the farm product to be exempt from the regulations of the plan. Part 2 are the regulations. The regulations are made by the Farm Products Marketing Board. The regulations are the "blood and tissue" of the marketing plan. They define the extent of the regulations or control over the marketing of the regulated product. The regulations provide for the exemption, if any, from any part of the regulation or control over the marketing of the regulated product. They provide for the collection of licence fees or service charges, payable by the producer, on the regulated product or products to pay for the administrative or marketing expenses of the local board. Finally the regulations set out the marketing powers delegated by The Farm Products Marketing Board to the local board or to an agency of the local board to carry out the purposes of the plan.

The functions of the Farm Products Marketing Board which administers the regulations approved under The Farm Products Marketing Act are fourfold. Firstly, it receives requests from groups of producers seeking the approval of marketing plans and if a group represents 15% of the producers affected by the proposed plan the Board shall investigate and consider the purposes of the plan. Secondly, if the Board is satisfied a proposed plan will promote the more efficient marketing of the

farm product or class or portion thereof, it arranges for a plebiscite to be taken of the producers of the farm product or class or portion thereof on the question of favour of the plan. Thirdly, if the required percentage of the producers vote in favour of the proposed plan, then the Board exercises general supervision over the operation of the plan, on approval, to provide the powers delegated to the local board elected by the producers to administer the plan are not exceeded. All price agreements, orders and directions of each local board must be filed with the Farm Products Marketing Board. Fourthly, the Board may revoke any regulation, order or direction of a local board or marketing agency.

The impact of the new Canada Agricultural Prices Stabilization Act, 1958 on the operation of the Ontario farm marketing plans became immediately pronounced during the year under review. This Act replaced the former Canada Agricultural Prices Support Act passed in 1944. As a result of the acceptance by farmers of price ceilings during World War II the Parliament of Canada provided a formal basis for agricultural price support for all farm products, except wheat, for the transition period from war to peace. No price formula was set out in the Act. The decisions as to the levels at which prices may be maintained or the commodities whose prices are to be supported were left to the agency administering the Act to recommend to the Government. The Agricultural Prices Stabilization Act, 1958 proposed by contrast to stabilize farm income by writing into the Act a definite system of guaranteed prices for agricultural products based on a ten-year moving average formula. The agency administering the Act is authorized to establish the base price for a commodity by calculating the average price at representative markets for the ten years immediately preceding the year in which the base price is established. The guaranteed price for such commodity will be set as a percentage of the base price. Nine key commodities: cattle, hogs, sheep, butter, cheese and eggs; and wheat, oats and barley not grown in areas designated under the Canadian Wheat Board Act, are called "named commodities" in the Act on which prescribed prices of not less than 80% of the base price must be set. All other commodities, natural or processed, are called "designated commodities" on which prescribed prices at such percentage of the base price as the Government approves will be set. The prescribed prices are to bear a fair relationship to the cost of production of each commodity. Prescribed prices for the "named commodities" are understood to be intended to be permanent through being set for a twelve-month period when their amount will be reviewed under the 10-year moving average formula before set for a further twelve-month period. Prescribed prices for the "designated commodities" may continue for such period as the Government decides.

During the year under review five producer farm marketing boards under the Ontario Farm Products Marketing Act moved to seek the shelter of the new security legislation for agriculture and succeeded in the case of wheat in having this product prescribed a "named product" and in the case of asparagus, peaches, sugar-beets and soya-beans in having these products prescribed as "designated products". In addition hogs became a "named product" and as a result obtained a higher support price than was in effect under the old Agricultural Prices Support Act.

Each plan in effect operated in 1958 as follows:

### 1. The Asparagus Plan

Some 800 growers sell asparagus annually to the canners in Ontario for processing. Only the processing industry is regulated, i.e., asparagus sold on the fresh vegetable market is exempt from the plan. After minimum prices and conditions of sale have been negotiated by the industry a marketing agency appointed by the growers' local board sells all the asparagus purchased for processing, each growing district being allotted its share of the tonnage sold. An unique feature of

this plan is an agreement by the growers to cease cutting when total orders have been filled. In this way production is fitted to demand.

In 1958, 1,789 tons of asparagus were sold for processing at a total value of \$552,035.00. This compares with 1,840 tons valued at \$732,553.00 for processing in 1957.

Asparagus minimum prices in 1958 compared with 1957 were:

1958			1957		
Select Grade	-----	25¢ per lb.	Grade No. 1	-----	29¢ per lb.
* No. 1 Grade	-----	18¢ " "	Utility Grade A	-----	22¢ " "
No. 2 Grade	-----	13¾¢ " "	Utility Grade B	-----	16¢ " "
No. 3 Grade	-----	7¢ " "	Grade No. 2	-----	7¢ " "

\* Due to heavy importations of canned asparagus into British Columbia and the threat of similar imports into Ontario the Canada Agricultural Stabilization Board paid a subsidy of 3¢ per pound on No. 1 grade asparagus to the growers in 1958 in order to maintain their minimum price and at the same time to reduce the cost of the processors' raw material.

## 2. The Pear, Plum and Cherry Plan

Some 2,000 growers sold 7,360 tons of sour cherries valued at \$1,234,531.00; 871 tons of sweet cherries valued at \$227,225.00; 2,806 tons of plums and prunes valued at \$169,715.00; 4,920 tons of Bartlett pears valued at \$492,350.00 and 7,495 tons of Kieffer pears valued at \$384,681.00 or a total of 23,452 tons valued at \$2,508,502.00 sold for processing in 1958.

This compares with 7,414 tons of sour cherries valued at \$1,525,819.00; 777 tons of sweet cherries valued at \$182,992.00; 2,784 tons of plums and prunes valued at \$169,462.00; 2,224 tons of Bartlett pears valued at \$258,878.00 and 5,945 tons of Kieffer pears valued at \$331,701.00 or a total of 19,144 tons valued at \$2,468,852.00 sold for processing in 1957.

Cherry, plum and pear minimum prices in 1958 compared with 1957 were:

	1958		1957
Sour cherries	\$165. per ton		\$205. per ton
Sweet cherries			
White and similar varieties	220. " "		220. " "
Black and similar varieties	240. " "		240. " "
Plums			
Damson variety	65. " "		70. " "
Jam types	53. " "		54. " "
Prunes	65. " "		70. " "
Bartlett pears 2" and up	100. " "		117.50 " "
Bartlett pears 1¾" to 2" -----	60. " "		75. " "
Kieffer pears 2-1/16" and up			
prior to November 3rd	50. " "		55. " "
after November 3rd	55. " "		60. " "
Pears, other than Bartlett			
or Kieffer varieties	60. " "		75. " "

## 3. The Peach Plan

1,450 growers sold 27,478 tons of peaches valued \$2,114,915.00 for processing in 1958. This compares with 30,027 tons of peaches valued at \$2,883,092.00 sold for processing in 1957. Peach minimum prices in 1958 compared with 1957 were:

	1958*		1957
Jubilee	\$83. per ton		\$ 97.50 per ton
Elbertas	83. " "		100. " "
"V" type and other varieties	83. " "		82.50 " "



\* Due to heavy importations of canned peaches into Canada in 1958 the Canada Agricultural Stabilization Board entered into an arrangement with the peach processing industries in Ontario and British Columbia whereby the price to be paid to the growers for peaches would be determined by the average net selling price per case received by the processors as computed by the Board. The arrangement provided the processors would pay the growers \$70.00 per ton in any event and should the average price received for the canned peaches not warrant \$83.00 per ton the difference between the amount payable and \$83.00 per ton would be paid by the Board. Any payments to the growers above \$83.00 per ton would depend on the average net selling price obtained by the processors.

#### 4. The Sugar Beet Plan

In 1958 some 2,514 growers delivered 462,564 tons of sugar beets produced from 31,584 acres. This compares with 265,342 tons of sugar-beets produced from 19,737 acres by 1950 growers in 1957. Average yield per acre in 1958 was 14.65 tons compared to 13.44 tons in 1957. Total value of sugar beets to the growers was up at \$5,200,000 in 1958 allowing for supplementary payments still to be made compared to \$3,685,000 in 1957. Average sugar content in 1958 was 15.9% compared to 16.08% in 1957. Average estimated price delivered plant to the grower was \$11.23 per ton (at June 1st) in 1958 compared to \$13.89 per ton in 1957.

Sugar beets came under the shelter of the Canada Agricultural Prices Stabilization Act in 1957 when a support price reflecting 93% of the ten-year average price for beet sugar of \$13.00 per ton for 17% sugar content beets delivered plant was established. As the price paid exceeded the support price there was no deficiency payment due the grower on the 1957 crop. In 1958 the basis of support was changed slightly to the equivalent of \$7.98 per hundredweight for beet sugar f.o.b. plant. The prices for sugar have weakened considerably over the past two years due to heavy world sugar production. With an average price of 1958 beet sugar f.o.b. plant shaping up at about \$7.35 per hundredweight a deficiency payment to the growers from 75¢ to \$1.00 per ton on the 1958 sugar beet production may be in prospect.

#### 5. The Seed-Corn Plan

The membership of this marketing group is comprised of some 275 hybrid and open-pollinated corn growers in south-western Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel average for the three months, December, January and February in each year. The base price for the 1958 crop was \$1.23 per bu., 14.5% moisture, and for the 1957 crop was \$1.24 per bu., 14.5% moisture.

In 1958, 317,349 bushels approximately of hybrid corn for seed and 36,255 bushels approximately of open-pollinated corn for seed were produced compared with 350,000 bushels of hybrid corn for seed and 35,000 bushels of open-pollinated corn for seed produced in 1957.

The minimum prices for hybrid corn for seed and for open-pollinated corn for seed in 1958 compared with those in 1957 were:

## Hybrid Corn for Seed

1958

1957

## SCHEDULES A, B, C, D

*The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:*

*The base price and a premium of 30% on the base price also allowance for certain costs when assumed by the grower, namely:*

- (a) Dealer supplies the seed and detassels the corn. Grower delivers the corn on the cob to the dealer.

\$1.62 per bu.

\$1.64 per bu.

- (b) Grower supplies the seed, detassels and delivers the corn on the cob to the dealer.

\$1.62 per bu. and 55¢  
per bu. = \$2.17 per bu.\$1.64 per bu. and 55¢  
per bu. = \$2.19 per bu.

- (c) Grower supplies the seed, detassels, dries, shells and delivers the dried shelled corn to the dealer.

\$1.62 per bu. and 90¢  
per bu. = \$2.52 per bu.\$1.64 per bu. and 90¢  
per bu. = \$2.54 per bu.

## Open-Pollinated Corn for Seed

1958

1957

## SCHEDULE E

*The base price and a premium of 30% on the base price also additional allowances for certain varieties.*

*The base price and a premium of 30% on the base price also additional allowances for certain varieties.*

Yellow Dents (other than Early Golden Glow)

\$1.62 per bu.

\$1.64 per bu.

Other Dents (including Early Golden Glow)

\$1.62 per bu. and 10¢  
per bu. = \$1.72 per bu.\$1.64 per bu. and 10¢  
per bu. = \$1.74 per bu.

Flints

\$1.62 per bu. and 50¢  
per bu. = \$2.12 per bu.\$1.64 per bu. and 50¢  
per bu. = \$2.14 per bu.

## 6. The Berry Plan

Some 400 growers sold 3,055,015 qts. of strawberries valued at \$639,099.00; 332,799 qts. of red raspberries valued at \$115,910.00 and 298,841 qts. of purple raspberries valued at \$85,136.00 or a total of 3,686,655 qts. valued at \$840,145.00 for processing in 1958. This compares with 2,255,203 qts. of strawberries valued at \$407,149.00; 398,668 qts. of red raspberries valued at \$157,751.00 and 210,080 qts. of purple raspberries valued at \$72,904.00 or a total of 2,864,051 qts. valued at \$637,804.00 sold for processing in 1957.

Strawberry and raspberry minimum prices in 1953 compared with 1957 were:

	1958	1957
Strawberries .....	16¼¢ per qt. box	13½¢ per qt. box
Raspberries		
Red .....	Open Market	Open Market
Purple .....	28¢ per qt. box	27½¢ per qt. box

## 7. The Bean Plan

Some 7,000 growers marketed approximately 1,100,000 bushels of edible dry beans in 1958 compared with 975,000 bushels in 1957. The minimum price to the growers was \$6.15 per cwt. in 1958 compared to the same price in 1957. An additional storage allowance was made to the growers of 15¢ per cwt. on all beans sold during the period January 1st to August 15th in both years. A graduated scale of charges by dealers for grading and picking beans for the growers in excess of 2% damage and in excess of 18% moisture was negotiated and established. The levy deducted from the growers to support the minimum price in each year was 77¢ per hundredweight in addition to the regular 8¢ per hundredweight licence fee for administration purposes. Out of the support levy 70¢ per hundredweight on the 1957 crop was returned to the growers and about same amount, it is estimated, will be returned on the 1958 crop. Marketing was not completed at the time of writing this report. The 7¢ per hundredweight levy on the 1957 crop and the estimated same levy on the 1958 was used to market outside of Canada some 50,000 bushels of the 1957 crop and an estimated 35,000 to 40,000 bushels of the 1958 crop which was surplus to domestic requirements.

## 8. The Vegetable Plan

Some 9,000 growers sold 315,663 tons of tomatoes valued at \$11,238,211.00; 21,597 tons of green peas valued at \$2,162,645.00; 78,551 tons of sweet corn valued at \$2,045,692.00; 2,597 tons of green and wax beans valued at \$297,107.00; 4,259 tons of beets valued at \$121,420.00; 5,193 tons of cabbage valued at \$82,055.00; 11,024 tons of carrots valued at \$308,902.00; 11,055 tons of pumpkin and squash valued at \$107,979.00; 1,085 tons of lima beans valued at \$131,012.00 and 856 tons of long green cucumbers valued at \$38,557.00 for processing in 1958, or a total tonnage of 451,880 tons of vegetables valued at \$16,533,680.00.

This compares with 195,752 tons of tomatoes valued at \$6,854,377.00; 34,157 tons of green peas valued at \$3,402,619.00; 80,724 tons of sweet corn valued at \$2,059,962.00; 3,713 tons of green or wax beans valued at \$418,404.00; 5,588 tons of beets valued at \$192,594.00; 6,502 tons of cabbage valued at \$102,574.00; 12,163 tons of carrots valued at \$373,376.00; 11,681 tons of pumpkin and squash valued at \$113,594.00 and 1,062 tons of lima beans valued at \$129,371.00 for processing in 1957 or a total tonnage of 351,342 tons of vegetables valued at \$13,646,871.00.

Minimum prices for 1958 compared with 1957 were as follows:

	1958	1957
Tomatoes—No. 1 .....	\$ 41.50 per ton	\$ 41.50 per ton
No. 2 .....	25.50 " "	25.50 " "
Green Peas—graded average of tenderometer readings		
0-85 .....	150.00 " "	98.50 " "
126-up .....	84.00 " "	98.50 " "
Sweet Corn .....	26.00 " "	26.00 " "
Green or Wax Beans .....	109.00 " "	109.00 " "
Beets		
(a) for beets graded by the processor		
¾" to 1¼" diameter .....	71.00 " "	71.00 " "
1¼" to 1¾" " .....	42.00 " "	42.00 " "
1¾" to 2½" " .....	30.00 " "	30.00 " "
2½" to 4½" " .....	15.00 " "	15.00 " "



(b) for ungraded beets 1½" diameter and up .....	24.00	"	"	24.00	"	"
Cabbage .....	14.00	"	"	13.50	"	"
Carrots .....						
(a) ungraded minimum diameter 1¼" June 25th to Aug. 15th .....	52.00	"	"	52.00	"	"
(b) ungraded minimum diameter 1½" Aug. 16th to Aug. 31st .....	35.00	"	"	35.00	"	"
(c) ungraded minimum diameter 1½" Sept. 1st to Sept. 15th .....	28.00	"	"	28.00	"	"
(d) ungraded minimum diameter 1½" Nov. 11th to Mar. 31st .....	27.00	"	"	27.00	"	"
Lima Beans .....	107.00	"	"	107.00	"	"
Pumpkin and Squash .....	10.00	"	"	10.00	"	"
Long Green Cucumbers, No. 1 .....	45.00	"	"	45.00	"	"
No. 2 .....	10.00	"	"	10.00	"	"

## 9. The Hog Plan

An action by the Ontario Hog Producers' Marketing Board against a livestock shipper during the year for shipping hogs without a licence, and for assembling hogs at places other than the assembly yards of the marketing agency of the local board led to far-reaching constitutional complications. In the lower Court the Magistrate acquitted the livestock shipper on eleven charges and dismissed an additional ten charges. Immediately Counsel for the livestock shipper applied to the Ontario Supreme Court for a writ of prohibition to bar the Magistrate's Court in Chatham from hearing pending charges against the livestock shipper. Subsequently, a Justice of the Ontario Supreme Court granted the writ of prohibition against the Magistrate in the case but also went farther and ruled that the hog marketing plan as amended and repassed in 1957 was never valid under law since it had not been preceded by a vote of the producers. The Farm Products Marketing Board appealed the judgment to the Ontario Court of Appeal and in the meantime because all the preliminary arrangements had been completed proceeded with the taking of a plebiscite of the producers on the continuation of the hog plan on July 25th, 1958. A list of 78,994 names of hog producers eligible to vote was compiled by the Board. The plebiscite was the largest ever conducted by the Board to date. The result of the vote gave 68.2% or 25,354 producers of those voting in favour and 31.8% or 11,797 producers opposed. As the percentage in favour exceeded the 66⅔% required under the regulations the Board announced the plan would continue in operation.

Two months later over six hundred objecting hog producers to the continued operation of the marketing plan elected a Committee of ten producers at a protest meeting at Tavistock, Ontario and authorized the Committee to engage Counsel and move in the Ontario Supreme Court for an Order to set aside the July 25th vote and to demand that a new vote be held in view of many alleged breaches of the regulations and of the common law in the conduct of the vote.

Subsequently judgment was delivered by the Ontario Court of Appeal on the appeal to the decision that the Hog Marketing Plan as amended and repassed in 1957 was invalid. The Court agreed with the earlier decision but it further held that the hog plan as repassed in 1957 was not effective to revoke the hog plan as approved in 1949 and amended in 1955, which is still valid and in force. Almost immediately after this decision the Chief Justice of the High Court granted the injunction requested by the objecting hog producers to the continuation of the plan to restrain the Farm Products Marketing Board from taking any action as a result of the July 25th plebiscite and declared the vote null and void since it was taken on a plan that had

later been declared invalid. But the Chief Justice adjourned the application for an order for another plebiscite in an effort to allow the Board and the Plaintiffs to get together and see whether agreement could be reached on a new vote.

Apart from these court references the year just ended marked developments in other areas concerning the hog producers' marketing plan. The Ontario Hog Producers' Co-operative, marketing agency of the Ontario Hog Producers' Marketing Board continued more actively through 1958 its programme of establishing minimum prices daily on live hogs, of directing their marketing and providing for two additional hog assembly points to the fourteen opened during the 1954-1957 period. As a result it was reported by the marketing agency that at the end of the fiscal year upwards of 85% of all the hogs graded in Ontario were being sold on the open market at 16 assembly points from 24 counties with the balance being shipped direct to packers located outside the Province.

During the year the Ontario section of the Canada Meat Packers' Council requested the Ontario Government to intervene in an impasse which it claimed had been reached in its relations with the Hog Producers' Marketing Board. It was alleged the matters at issue had been previously discussed between the two groups without any conclusions being reached. Crux of the problem was the method of price determination and the resulting allocation of hogs by the marketing agency of the Hog Producers' Marketing Board. Over a six-month period some dozen meetings were held jointly and severally between the two groups with Ontario Government representatives in an effort to work out a mutually agreeable system of determining prices for hogs and allocating the supply to the various processors of which there are some forty-two in the Province, eleven of whom handle some 80% of the supply and the remaining thirty-one which handle the balance of the supply. Discussions were continuing at the year end with the only progress made thus far being statements by the Ontario Government representatives that pricing and allocation of hogs had to be done by a system which was completely in the public view and which would develop confidence and trust on the part of all concerned as essential to the long-run improvement of hog marketing in Ontario.

Federal support prices on hogs have been in effect in Canada each year since the termination of the Canada-United Kingdom pig meat contracts in 1950. In 1957 the Ontario hog support price under the old Canada Agricultural Prices Support Act was \$23 per cwt., delivered Toronto. On the approval of the new Canada Agricultural Prices Stabilization Act hogs became one of the nine key commodities which had to be supported at a mandatory level of not less than 80 percent of the previous 10-year average. As a result a support price in Ontario hogs commencing April 1st, 1958 of \$25 per cwt. delivered Toronto was established or equal to approximately 85% of the 1948-57 ten-year average price.

#### 10. The Grape Plan

Some 825 growers marketed 33,700 tons of grapes valued at \$2,901,138.00 for processing in 1958. This compares with 24,125 tons of grapes valued at \$2,109,476.00 sold for processing in 1957.

Grape minimum prices in 1958 compared with 1957 were:

	1958	1957
Grapes .....	\$85.00 per ton	\$85.00 per ton

#### 11. The Soya-Bean Plan

This plan is similar in principle to the other cash crop plans in operation except that the market for soya-beans is limited entirely to a few processors for manufacture into various soya oil and meal products and that Canada is not more than 50%



self-sufficient at the present time in its production of soya-beans for its combined soya oil and meal requirements. Soya-beans, soya meal and crude soya oil are imported free of duty and refined soya oil is imported at a 20% tariff rate. Hence the cost of soya-beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya-beans, soya-bean oil and a host of other competing edible oils. Faced with this situation for the eighth time in its eight years of operation, in 1957 a Negotiating Committee decision recommended that a fixed minimum price for soya-beans to the 4,000 interested Ontario growers was not practical, and that the price paid should be the trading price from day to day on an open market basis. This view continued in 1958. A dealer's maximum charge of 10¢ per bu. to the grower for cleaning, handling and selling soya-beans, which due to competition between the dealers is seldom charged in full, and a discount of 2½¢ per bu. for each ½% moisture content over 14% and up to 18% to cover shrink and drying expenses and for soya beans with moisture in excess of 18%, a discount of 5¢ per bu. for each ½% of moisture content with cash to be paid by the dealer to the grower for all soya-beans on delivery were the main terms of contract negotiated and established under the plan. Where soya-beans are dried, there shall be a maximum charge of 1¢ per bu. to the grower for each ½% of moisture content over 14%. After several years of increasing acreage the industry is now tending to stabilize itself at about present proportions. Acreage planted in 1958 was 256,000 acres compared to 252,000 acres in 1957. Yield increased in 1958 to 6,579,000 bu. compared to 6,476,000 bu. in 1957.

During the year representations were made by the Ontario Soya-Bean Growers' Marketing Board to the Government of Canada for a support price on soya-beans of \$2.60 per bushel to the grower or equivalent to 110% of the 1948-57 ten-year average price in an effort to increase present production of about 50% of Canadian requirements more nearly to total domestic needs. The Government of Canada approved a support price but set it at \$2.10 per bushel to the grower, on a deficiency payment basis, or equivalent to 90% of the 1948-57 ten-year average price. The arrangement was arrived at after planting time for the 1958 crop had passed so it will be impossible to determine what effect it had in encouraging increased production until 1959.

## 12. The Fresh-Peach Plan

As reviewed in its last annual report the Board decided, at the request of the Ontario Fresh-peach Growers' Marketing Board to conduct a plebiscite on the continuation of the Ontario Fresh-peach Growers' Marketing Plan due to the number of fresh-peach growers ignoring the regulations and refusing to pay their service charges under the plan and to the activities of the Ontario Peach Growers' Protective Association on their behalf in soliciting public opinion against the fresh-peach marketing plan. Preparations were under way for this plebiscite to be conducted on January 27th, 1958. As a basis for compiling the eligible voters list the Board decided that all peach growers who had marketed their fresh peaches under the plan in 1957 would be eligible to vote and that all peach producers who had not marketed under the plan in 1957 but who had two acres or more of peaches in production would be eligible to vote. Almost immediately the Ontario Fresh-Peach Protective Association applied to the Ontario Supreme Court for an injunction to restrain the Ontario Farm Products Marketing Board and the members thereof from conducting the plebiscite on this definition of eligibility to vote. The application was successful and forced a postponement of the plebiscite until May 30th, 1958 when the vote was held. Any producer then known to have one or more peach trees on his premises was determined eligible to vote as a result of the injunction placed by the Ontario Supreme Court on the Board. On this basis, 2,850 peach growers were eligible to vote, of whom 1,124 growers voted in favour of the continuation of the plan and 484 growers voted



in opposition to its continuation. As 70% of those voting voted in favour of continuance the Board announced the plan would remain in effect.

Apart from the above Court reference several marketing conditions made 1958 a most difficult and unsatisfactory fresh-peach marketing year.

The 1958 peach crop totalled 51,756 tons or 6,446 tons larger than the 1957 crop. In addition purchases by processors who normally take 60% of the crop dropped to 53% or 27,477 tons in 1958 leaving the abnormally large volume of 24,279 tons to be sold during the short 12-14 week peach marketing season.

In another direction, however, operations were more successful. Assisted by the larger crop the Ontario Fresh-Peach Growers' Marketing Board was able to pay off all its outstanding debts from the 1957 season which totalled some \$175,000.00. This freedom from debt should permit a more effective programme in 1959.

Studies of the operation of the fresh-peach marketing plan since its inception in 1953 lead to only one conclusion if the plan is to be fully effective. With a highly perishable crop of upwards of 20,000 tons of produce to be well distributed about half must be sold in Ontario and the other half in outside markets, chiefly Quebec and the Maritime Provinces. The establishment of a uniform and effective f.o.b. shipping point price then becomes an absolute necessity if sales are to be made in large quantities to volume buyers during peak harvesting periods due to the shortness of the marketing season. Such buyers will only buy in volume and, will only feature peaches in their stores when they have definite assurance no one is buying for less. It is now estimated that about eighteen buyers purchase the substantial proportion of the peaches sold through the fresh fruit trade. Some eighteen buyers cannot be effectively answered by some 2,500 selling growers each quoting a price. This has become the problem confronting the peach grower, on the evidence from the operation of this marketing plan since 1953, if a successful programme is to be developed for the distribution of a perishable commodity like fresh peaches.

### 13. The Flue-Cured Tobacco Plan

Controversy which originated early in 1958 between the Ontario Flue-Cured Tobacco Growers' Marketing Board and the tobacco buyers as a result of a 15% cut in acreage for that year continued into the minimum price and terms of sale negotiations for the crop that fall. At that time the growers decided to abandon the previous policy of negotiating a minimum average price for each grower's crop and instead to negotiate a scale of 42 minimum tobacco grade prices. The tobacco buyers declined to participate in the negotiations and the ensuing arbitration for the reasons they claimed the Ontario Flue-Cured Tobacco Growers' Marketing Board had prevented them from seeing the tobacco on the farms during the growing period so they didn't know what they would be buying and also because at the time the price negotiations were held the crop was not fully harvested so its size and distribution by grade and weight was not known. A sideline issue in the argument was the general use by the growers during 1958 of the chemical MH-30 to avoid hand suckering. The buyers had publicly opposed its use chiefly because treated tobacco has a reduced cigarette filling capacity; i.e., only some 350 cigarettes may be made from a pound of treated leaf as compared to some 400 cigarettes from a pound of untreated leaf. When the chemical is improperly applied the tobacco becomes reddish or scorched in colour and lower in quality. For other reasons the 1958 flue-cured tobacco crop was lower in quality and colour than the 1957 crop. The season was dry and backward to July 1st. Then the rains came and the crop recovered. Late in August, however, a cold spell in the main tobacco belt resulted in a much higher proportion of the leaves drying green than usual.

When the tobacco market opened in November it was soon apparent that the minimum grade prices were unrealistic for six to eight of the lower grades in view of the heavier poundage of common quality tobacco on the market at that time. Also in the picture was the 1958 arbitration award setting minimum prices by grade for the first time in Ontario at an average increase of 2¢ per pound, grade for grade, over the actual prices paid for a smaller, higher quality crop in 1957.

As a result of the impasse which developed in the auction warehouses, six of the lower grades were exempted during January, 1959 from the minimum grade prices set on them the previous September by joint agreement between the growers and buyers and prices on these grades were left to free auction bidding on the exchanges. Even with this agreement, however, daily tobacco sales were slow and difficult but it was evident that buyers favour the bale auction system since it permits them to pick and choose the grades and classes of leaf they prefer compared to buying some grades and classes they do not want under the whole crop barn-buying system in effect prior to 1957. The old method to some extent favoured the poor grower and discounted the good grower. The new method to a like extent favours the good grower and hits the poor grower.

The marketing of the 1958 crop concluded on May 8th, 1959 compared to April 18th, 1958 for the 1957 crop. The 1958 crop totalled 174,000,000 pounds and sold at an average price of 47.5¢ per pound or some 4¢ per pound below the minimum average price of 50.32¢ per pound for the 1957 crop which totalled 147,873,775 pounds after allowing 1¢ per pound grading services to the grower which was included in the average price for the 1958 crop but which was additional to the minimum average price realized for the 1957 crop.

#### 14. The Winter Wheat Plan

As reviewed earlier in this report the Ontario Wheat Producers' Marketing Plan was approved during June, 1958. While the marketing plan was of the negotiating type it also included provision for an equalization fee of 9 cents per bushel paid by the producer to establish a price support fund to assist in the disposal of wheat surplus to domestic requirements. The unused portion of this fee has to be returned to the producers at the end of each crop year.

The new Ontario Wheat Producers' Marketing Board in its first year's operation faced a world surplus of wheat of both hard and soft varieties. Wheat farmers in practically all the producing countries of the world receive Government assistance of some kind. In Canada no such assistance was available to the winter wheat producers up to 1958. But the Canada Agricultural Prices Stabilization Act, 1958 now promised a system of Government farm product support prices.

Immediately on being established representations were made by the Ontario Wheat Producers' Marketing Board to the Government of Canada for a soft wheat support price. The base price was established at \$1.78 per bushel, f.o.b. country shipping point, and the Ontario Wheat Producers' Marketing Board endeavoured to have the support price set at 90 percent of the base price or \$1.60 per bushel. The Canada Agricultural Stabilization Board declined to agree to as high a support price but prescribed the lowest minimum price possible under the legislation of 80 percent of the base price or \$1.42 per bushel. Meanwhile, negotiations were continuing between the Wheat Producers' Marketing Board and the trade in an attempt by the producers to negotiate under their marketing plan a minimum price higher than the Government support price. These negotiations succeeded in establishing maximum handling charges and discounts for moisture to be paid by the producers and price discounts for wheat grading below No. 2 but failed to agree on the question of a minimum price. This question went to an Arbitration Board which awarded a



graduated scale of minimum prices beginning with the harvesting of the crop in July at \$1.45 per bushel, rising to a high of \$1.50 per bushel the following January and February and declining thereafter to \$1.45 per bushel by the following June. Significantly the Arbitration Board also ordered that the Ontario Wheat Producers' Marketing Board must buy carlots of wheat when offered by dealers or processors at the ruling shipping point minimum price and in the event the Board decides to offer wheat for export at less than the minimum price the grain trade generally should be given an opportunity to bid on such wheat. If a sale was made then proof in the form of certified export entries had to be furnished to the Board showing that the shipment had left Canada.

Confronted with this award and with no experience in commercially handling and dealing in wheat the Ontario Wheat Producers' Marketing Board turned to the Grain Marketing Division of the United Co-operatives of Ontario for assistance and entered into an arrangement whereby its trading facilities were made available to the Board. Over its first year's operations 3.4 million bushels of wheat were purchased and moved to Montreal for export. The expense involved was paid out of the 9 cents per bushel equalization fee.

#### 15. The Ontario Tender Fruit Growers' Marketing-for-Processing Plan

During the year the members of the Ontario Peach Growers' Marketing Board and the Ontario Pear, Plum and Cherry Growers' Marketing Board petitioned the Board that the two marketing plans involved, which regulate the marketing of four fruit crops for processing be combined in one plan. In addition the petition further requested that limited powers of regulating and controlling the crops in question be extended to a co-operative corporation to be designated the agency of the new local board to provide that the fruit would be marketed by or through the agency which would also have the authority when deemed necessary by it to pool the returns received from the sale of the fruit. But minimum prices would continue to be determined by negotiation with the processors as at present. The proposal was made by the organizations involved following many irregularities which took place during the 1958 marketing season as a result of bumper crops and large imports of the same commodities. These offended the established minimum price and contract agreements. Since so many persons were involved it was felt the best course to pursue was to tighten up the marketing system all the way from the producer to the processor. Since the purposes of the proposed new plan were much wider than the two existing plans the Board indicated a plebiscite of the producers would be necessary before the proposal could be considered. An eligible voters' list of 2,640 growers' names was compiled by the Board and the vote was held on March 16th, 1959. The result gave 942 in favour and 146 opposed. As the majority exceeded 66 $\frac{2}{3}$ % of those voting the Board recommended the proposed Ontario Tender Fruit Marketing-for-Processing Plan for approval which was granted. As soon as the affairs of the two existing local boards can be wound up and their assets transferred to the new local board the two former plans and regulations will be revoked.

#### THE FARM PRODUCTS CONTAINERS ACT

Under this Act licence fees in the amount of 1% added to the manufacturer's selling price of all wooden and paper containers manufactured and sold for use in the marketing of fresh fruits and vegetables produced in Ontario have been levied and paid to the Ontario Fruit and Vegetable Growers' Association since November 1st, 1947. The fees received during the fiscal year ended March 31st, 1959, amounted to \$34,407.52 and the total fees received to date by the Association since the levy was imposed amount to \$348,536.37.



Also under this Act licence fees in the amount of 5% added to the manufacturer's selling price of all cans and paper containers manufactured and sold for use in the marketing of honey produced in Ontario, have been levied and paid to the Ontario Beekeepers' Association since April 1st, 1948. The total fees received by the Association since the levy was imposed to the fiscal year ended March 31st, 1958 amount to \$127,803.60. During the year under review difficulties developed within the industry as a result of the methods adopted by some beekeepers to avoid paying the licence fee. The Ontario Beekeepers' Association therefore recommended that the levy be discontinued so no funds were collected during the past year.

## THE CO-OPERATIVE LOANS ACT

Under this Act loans up to a maximum of \$100,000.00 secured by a first mortgage may be made to agricultural co-operative organizations to assist them in financing capital expenditures necessary to provide facilities for the grading, cleaning, packing, storing, drying, processing or marketing farm products.

During the year ended March 31st, 1959 seventeen loans totalling \$435,336.00 were approved, as listed below, compared to eleven loans totalling \$705,539.00 made during the year ended March 31st, 1958. In all instances the loans made were to expand existing facilities.

1. Upper Ottawa Co-operative Poultry Products	—Poultry Processing	\$ 13,000.00
2. The Georgian Bay Fruit Grovers Limited	—Cold Storage	15,000.00
3. Mildmay Co-operative Association	—Feed Mill	8,336.00
4. Prince Edward County Fruit Growers' Limited	—Cold Storage	33,500.00
5. Arthur District Co-operative Incorporated	—Feed Mill	10,000.00
6. Wilton Dairy Company Limited	—Cheese Factory	15,000.00
7. Kingsville Co-operative Supply Association	—Feed Mill	40,000.00
8. Harrow Potato Growers' Co-operative	—Cold Storage	25,000.00
9. Durham Farmers' County Co-operative	—Feed Mill	30,000.00
10. La Co-operative Laitiere Regionale De Hearst	—Dairy	20,000.00
11. Middlesex Growers' Co-operative Limited	—Cold Storage	15,000.00
12. Napanee District Co-operative	—Feed Mill	45,000.00
13. Pr. Edward Poultry Products Co-operative	—Feed Mill	32,500.00
14. Toronto Milk Producers' Co-operative	—Dairy	54,000.00
15. Guelph District Co-operative Services	—Feed Mill	24,000.00
16. Gananoque District Co-operative	—Feed Mill	15,000.00
17. Uxbridge Farmers' Co-operative	—Feed Mill	40,000.00
Total		\$435,336.00

At the end of the fiscal year there was outstanding through loans and guaranteed bank credits to 93 co-operatives \$2,786,468.00 compared to \$4,757,318.95 to 83 co-operatives at the end of the previous fiscal year.

The size and importance of farmer-owned co-operatives together with the value of their property and facilities in Ontario is steadily increasing. Now with the demand for more controlled atmosphere apple storage space from the fruit marketing co-operatives and for improved drying and handling facilities from the grain marketing co-operatives indications point to an increase in the number of loan applications over the next few years.

## THE GRAIN ELEVATOR STORAGE ACT

Due to the number of Western Ontario grain dealers going into bankruptcy in recent years with substantial losses accruing to farmers having grain in storage, the need for a uniform grain elevator operating policy to protect as far as possible grain in storage for the account of the producer became apparent.

A Committee to study and report on the situation appointed jointly by the Minister of Agriculture and the Attorney-General of Ontario in 1957 studied the matter, held public hearings of grain producers and dealers and investigated grain handling and marketing practices elsewhere in Canada and in the United States. In due course the Committee recommended with the approval of the grain producers and dealers, the passing of the Ontario Grain Elevator Storage Act by the Ontario Legislature. This was done during the 1958 Session.

The purpose of the Act is to ensure that the licensed grain dealer or elevator company has enough grain on hand or acceptable warehouse receipts to take care of all storage grain and to provide that at no time shall the licensed grain dealer or elevator company use or pledge farmer-stored grain for his own account.

The practice of Ontario cash grain growers making delivery of wheat, dry beans or corn to the elevator operator at harvest time and arranging for storage with the elevator operator in order to sell at a future date has developed to the point where most elevator operators and dealers now provide this service. But no requirement was ever placed on the elevator operator or dealer that he had to keep sufficient grain on hand to cover his storage commitments. Now, under the new legislation, all elevator operators or dealers accepting grain for storage are required to provide proper storage facilities, adequate insurance and to keep an accurate up-to-date record of all grain in storage.

## THE FARM PRODUCTS GRADES AND SALES ACT

To aid the orderly marketing of fruits and vegetables within the province and to ensure that up-to-grade quality produce is offered for sale at the shipping point and wholesale levels an extensive inspection service is provided under The Farm Products Grades and Sales Act. The inspectors are located in designated compulsory inspection areas, at highway inspection stations, in certain producing areas and at receiving and distribution points throughout the province.

In addition the inspection staff carries out the grading of tomatoes and carrots for processing during the canning season, to determine the basis on which payment is made. This service is entirely financed by fees collected from the producers and processors.

Other related work carried out by the Inspection Service includes: greenhouses and acreage surveys, variety certification, marketing and packaging research, produce movement surveys, licensing of all fruit and vegetable dealers, and extensive work in relation to proper harvesting, storing, handling, transporting, grading, packing and packaging of fruit and vegetables.

These services are administered through six district offices located in Leamington, Grand Bend, Vineland, Toronto, Bradford and Gravenhurst. In addition sub-offices were operated in Simcoe, Galt, Hamilton, Orangeville, Alliston, Barrie, New Liskeard, Brighton and Ottawa.

### Fresh Fruit and Vegetable Inspection

Compulsory inspection areas have been designated in Essex County, the Niagara Peninsula and at the Bradford Marsh, all controlled by Highway Inspection Stations.

A Highway Station was also operated at Gravenhurst and all trucks carrying produce from southern Ontario to the North, along No. 11 Highway, were required to stop for inspection. Administrative and request inspection was carried out within the closed areas at farm and shipper packing sheds, dealers' platforms and at central packs.

Outside the compulsory areas, inspection of fruit and vegetables was carried out in the main production areas, at receiving and distribution points and at the wholesale and retail levels throughout the Province.

Retail inspection in the larger centres of Ottawa, Metropolitan Toronto, Hamilton, London and Windsor was applied entirely by the Consolidated Retail Inspection Service, Dominion Department of Agriculture. Consumer complaints, farmers' markets, roadside stands and community sales barns were covered mainly by Provincial Inspectors.

### Inspection of Processing Crops

**TOMATO GRADING** — In 1958, 80 grading platforms were operating, necessitating a total of 163 men and women graders who graded 86,623 loads of tomatoes. The yield and the quality of tomatoes was exceptionally good in Western and Central Ontario but very disappointing in the Eastern Ontario district.

**CARROT GRADING** — In 1958 carrots for processing were graded at the following points: Campbell Soup, New Toronto; Clarkson Cold Storage, Clarkson; Laing's Cold Storage, Hamilton; Vineland Growers' Co-operative, Jordan. 688 loads were received and the average grades were, No. 1 — 93%; Undersize — 3%; Culls — 4%.

**PEA GRADING** — The grading of this crop was not carried out by inspection personnel. However, Farm Products Inspectors undertook a programme of checking the tenderometers used by processors to determine the tenderness of peas, which was a basis for payment to the grower.

**OTHER CROPS** — Farm Products Inspectors were constantly requested to inspect other regulated fruit and vegetable processing crops in cases of dispute, as provided for in the marketing agreements approved under a number of the farm marketing plans.

### Licensing of Dealers

Under the regulations all dealers in fruit and vegetables must obtain a dealer's licence and windshield markers for each truck used. During 1958 there were 990 dealers' licences and 2,172 markers issued.

### Acreage Surveys

Surveys of the concentrated marsh vegetable production areas were conducted again. These are valuable to the industry and show the trends in the commodities produced for the ever-changing and competitive provincial, interprovincial and export markets.

### Containers

Improved packaging of fruit and vegetables continues to progress. There is a constant search for more efficient and protective shipping containers and more eye-appealing consumer packages. New containers are authorized on an experimental basis and carefully tested before such packages are standardized for general use.



## THE PLANT DISEASES ACT

Seasonal work carried out under The Plant Diseases Act includes inspection of orchards for apple maggot infestation, inspection of potatoes under the Bacterial Ring Rot Regulations and inspection of nurseries for freedom from disease. Ontario nurseries must operate under permit issued by this Branch.

Approximately five and one-quarter million nursery fruit trees and ornamentals were inspected for San José scale, fire blight and black knot during the summer months with the assistance of the Canada Department of Agriculture. Very little plant disease was in evidence. 332 nurseries and dealers in nursery stock were licensed in 1958.

Variety identification of nursery fruit trees was provided in 22 nurseries with 0.46% mixtures in the 388,000 trees inspected. 25 varieties were certified for 16 raspberry plant growers for freedom from varietal mixtures and reasonably free of mosaic and leaf curl virus.

Assistance in preharvest inspection of apple orchards to qualify apples for export as free from apple maggot was provided for 110 growers. Percentage of growers having apple maggot infestation present in their orchards was 37.3%.

Assistance was given the Canada Department of Agriculture with soil treatment for Japanese Beetle control in Fort Erie, St. Catharines and Hamilton, as well as providing Japanese Beetle trap attendants in Windsor and Hamilton. Assistance was also given to the Crops Branch in Bacterial Ring Rot inspection.

As a result of the interest in bulb and stem nematode we collected onion samples in marsh areas at Leamington, Grand Bend and Bradford for laboratory testing for the presence of this insect. This nematode has not been reported as yet outside the Leamington area.

## *Ontario Live Stock Branch*

Some conception of the importance of the live stock industry to Ontario agriculture can be gleaned from table No. 1 which shows the estimated value of live stock marketed at public stock yards, shipped direct to packers and direct on export during 1958.

TABLE No. 1

<i>Class of live stock</i>	<i>Estimated Value</i>		<i>% originating in Ontario</i>
	<i>Canada</i>	<i>Ontario</i>	
Cattle .....	\$479,676,492	\$152,628,066	32%
Calves .....	66,451,655	12,710,580	19%
Hogs .....	281,648,294	100,874,802	36%
Sheep and lambs .....	9,737,031	2,880,787	29%
Total .....	\$837,513,472	\$269,094,235	32%

Admittedly these figures are quite impressive. Nevertheless they do not include returns from the sale of live stock products. When revenue from milk, poultry and eggs sales are added the total represents about 70 per cent of Ontario's gross farm income. Furthermore this province accounts for slightly over one-third of the returns derived by Canadian farmers from the sale of live stock and live stock products.

The number of head of each class of live stock marketed by Ontario farmers in each of the past two years are listed in table No. 2.

TABLE No. 2

<i>Class of live stock</i>	<i>No. Marketed</i>		<i>% Change in 1958</i>
	<i>1958</i>	<i>1957</i>	
Cattle .....	798,285	748,860	+5.4%
Calves .....	241,646	268,207	-9.9%
Hogs .....	2,183,578	2,016,853	+8.2%
Sheep and lambs .....	152,908	162,410	-5.8%

It will be noted that marketings of the two largest, revenue-producing classes of live stock were moderately higher in 1958 than in the previous year.

Prices fluctuated quite widely during the year and average prices for the two major classes of live stock were lower than in 1957, points which are illustrated in table No. 3.

TABLE No. 3

<i>Class of live stock</i>	<i>Range in monthly average prices</i>	<i>Average price per cwt. Ontario Stock Yards</i>	
		<i>1958</i>	<i>1957</i>
Choice steers .....	\$21.23 - \$27.21	\$24.07	\$24.16
Calves .....	25.87 - 33.89	30.60	26.48
B1 Hogs .....	24.50 - 32.43	28.13	30.05
Good lambs .....	20.35 - 25.46	22.35	19.72

N.B. (1) Both hogs and lambs sold at the floor price established by the federal government during certain months of the year.

(2) The figures quoted above were obtained from the Live Stock Market Review, 1958 edition.

The majority of Ontario farmers consider live stock the most profitable market for their field crops. Accordingly their cropping programme is planned with a view to producing the varieties most suitable for the feeding of live stock. Naturally, they realize that their gross returns can be increased by producing a top quality product and that net returns will increase as costs of production are reduced.

Briefly stated, the main function of the Ontario Live Stock Branch is to help them achieve these two objectives. The legislation and policies administered and promoted by members of the Branch staff are merely instruments for attracting attention to the factors which contribute to a more profitable live stock industry. An abbreviated account of 1958 activities pertaining to the legislation and policies is reported in the section which follows:

## CATTLE

Four factors are basic to any programme of live stock improvement. They are breeding, feeding, weeding and disease control. Two policies administered by the Branch were initiated primarily for the purpose of encouraging the wider use of outstanding sires.

### Artificial Insemination

Although members of the staff of the Ontario Live Stock Branch played a key role in organizing most of the artificial insemination units in the province, they retired from the active scene shortly after operations commenced. The units are now being capably managed by Boards of Directors elected by the members. Even so, operations are subject to the provisions of the Artificial Insemination Act. This Act provides for the licencing of units and of technicians, also prescribes standards for buildings, equipment and bulls. As long as the management of each unit is dedicated to the task of providing efficient service from the best available bulls, a situation which prevails at the present time, the regulations are somewhat superfluous.

Licences were issued to 15 units and to 249 technicians in 1958. Each of the 8 units in Old Ontario maintains a bull stud. The majority are utilizing the facilities at the Ontario Veterinary College for freezing semen from their top bulls. Semen from the bank established there is sold to the seven inseminating units in Northern Ontario and to other provinces.

History was made in 1958 when the 8 units joined forces and purchased a highly-regarded Holstein bull calf for \$30,000 at the sale of stars, Royal Winter Fair. Later a share in the bull was sold to the Maritime A.I. unit. Semen from this bull should be available before the end of 1959.

The volume of business conducted by A.I. units has increased every year since the first one was established in 1945. The number of cows bred by each licensed unit in each of the past two years is shown in table No. 4.

TABLE No. 4

<i>Name of the Unit</i>	<i>Headquarters</i>	<i>No. cows bred</i>	
		<i>1958</i>	<i>1957</i>
1. Oxford & District C.B. Ass'n.....	Woodstock	96,442	80,657
2. Central Ontario C.B. Ass'n.....	Maple	88,254	82,074
3. Waterloo C.B. Ass'n.....	Waterloo	69,654	58,873
4. Eastern Ontario C.B. Ass'n.....	Kemptville	54,195	44,432
5. Quinte District C.B. Ass'n.....	Belleville	38,641	35,083



6.	Hamilton District C.B. Ass'n.....	Hannon	38,450	36,045
7.	Lambton C.B. Ass'n.....	Wyoming	11,402	7,936
8.	Essex C.B. Ass'n.....	Essex	8,170	7,472
9.	Temiskaming C.B. Ass'n.....	New Liskeard	1,499	1,329
10.	Algoma C.B. Ass'n.....	Sault Ste. Marie	532	561
11.	Thunder Bay C.B. Ass'n.....	Fort William	554	712
12.	Rainy River C.B. Ass'n.....	Emo	1,163	626
13.	Dryden C.B. Ass'n.....	Dryden	251	311
14.	Cochrane C.B. Ass'n.....	Cochrane	747	609
15.	Porcupine C.B. Ass'n.....	Timmins	253	100
			<hr/>	<hr/>
			410,207	355,051

Increase in 1958, 55,156 services, or 15.5%.

Services according to breeds are shown in table No. 5.

<i>Breed</i>	<i>No. services</i>	<i>% of total</i>
Holstein .....	243,369	59.36
Jersey .....	19,465	4.75
Ayrshire .....	9,745	2.38
Guernsey .....	9,262	2.11
Hereford .....	75,395	18.37
Shorthorn .....	25,165	6.13
Angus .....	10,622	2.60
Dual purpose Shorthorn .....	9,356	2.28
Red Poll .....	307	0.08
Charolaise .....	4,966	1.32
Breed not reported .....	2,555	0.62
Total .....	<hr/> 410,207	<hr/> 100.00

Every semen producing unit is eligible for grants, the basis being 33-1/3 per cent of the cost of each bull purchased during the year but not more than \$600 on any bull. Because of the increased cost of providing the service in Northern Ontario, units operating in that area may qualify for grants on the basis of \$2.00 for every cow inseminated. In 1958, grants paid to units were as follows: on account of bulls purchased, \$23,874.20, and for services in Northern Ontario, \$15,154.

### Bull Premium Policy

Despite the fact that over 110,000 cows were bred artificially to bulls of the beef breeds the majority of beef producers still follow the practice of having their cows bred naturally. In an attempt to encourage the wider use of good beef sires premiums are offered to farmers who purchase approved bulls at the Ontario Show and Sale of Beef Bulls and at sales held under the auspices of breeders' clubs. Under this policy a higher premium is paid on bulls with satisfactory performance records than on those approved from the standpoint of appearance only.

During the year premiums amounting to \$34,341 were paid to farmers who bought 373 bulls at breeders' sales, and \$19,242.08 to the buyers of 180 bulls at the Ontario bull sale.

Members of the Live Stock Branch staff play an active role in the administration of two policies which complement the ones described above.

# Dairy Herd Improvement Associations

This programme was initiated primarily for the purpose of providing a milk recording service to owners of grade herds or of herds comprised of both grades and pure breds, and of obtaining comprehensive data pertaining to the cost of production. Thus dairymen who participate in the programme are in a position to do an intelligent job of culling the unprofitable animals from their herds. Latterly, however, the data provided by this programme have been used in our sire appraisal programme. The records of the two-year-old daughters of a sire are compared with those of the two-year-old daughters of other sires in the same herd or herds. By restricting comparisons to animals within the same age group and maintained under similar environmental conditions it is possible to formulate a fairly accurate opinion of a bull's breeding ability. This programme is of particular interest to the managers of Artificial Insemination Units, each of whom is anxious to get as much information as possible about the performance of the bulls in his stud.

1958 activities are summarized in the following table:

Number of D.H.I. Associations .....	58
" herds enrolled .....	1,315
Average number cows per herd .....	23
Number cows tested .....	29,962
Average production per cow — milk .....	9,527 lbs.
fat .....	388 "
Average butterfat test .....	3.58%

During recent years there has been a significant increase in the size of herd and in the average production per cow. Undoubtedly, the practice of weeding out low producers has been a factor in increasing the average, but most of the credit for this improvement must go to the artificial insemination programme, which has enabled dairymen with average commercial herds to breed their cows to the best bulls available in the province.

In many counties it has been impossible to accommodate all who would like to participate in D.H.I.A. In an effort to provide interested prospects with a milk recording service until they can be accepted as members the weigh-a-day-a-month plan was initiated in 1958. Under this plan the participant weighs the milk produced by each cow, on a fixed day each month. The weights for each cow are forwarded to the Live Stock Branch at the end of her lactation, after which a report of her milk production for that lactation is issued. Although the plan does not provide for the making of butterfat tests it does make possible the securing of valuable information concerning milk production, thereby enabling the dairyman to do some preliminary culling.

# Advanced Registry for Beef Cattle

This policy is designed to obtain factual information about the performance of young beef bulls. The factors taken into consideration are rate of gain on test, lifetime gain and, in the case of station tests, economy of gain.

The test commences when a bull is eight months old and covers a period of 168 days. During that time it is customary for the bull to be on full feed, thus he has ample opportunity of demonstrating his true ability to gain. Inasmuch as rate of gain is highly heritable some bulls gain faster than others. Tests conducted here and elsewhere indicate that the fastest gaining bulls invariably make the cheapest gains.

For a few years following the adoption of this policy breeders appeared to be reluctant to place bulls on test, but that attitude changed last year as evidenced by the fact that a high percentage of those who depend upon the sale of bulls for a major part of their income were active participants. The results of tests completed in the 11 months, May 1/58 to March 31/59 are summarized in the following table:

No. tests completed —	
Angus .....	27
Herefords .....	252
Shorthorns .....	247
Av. starting wt. — (8 months) .....	587.2 lbs.
Av. finishing wt. — (168 days later) .....	994.7 "
Av. total gain .....	407.5 "
Av. daily gain on test .....	2.42 "
Av. lifetime gain (birth to end of test) .....	921.5 "
Av. daily gain lifetime .....	2.26 "
Av. feed per lb. gain (station test only) .....	5.36 "

Some conception of the variation in ability to gain on test can be obtained from a perusal of the following table:

<i>Range in rate of gain</i>	<i>No. bulls</i>	<i>% of total</i>
Under 2.00 lbs. per day .....	47	9%
2.00 - 2.49 " " " .....	267	51%
2.50 - 2.99 " " " .....	185	35%
3.00 lbs. per day and over .....	27	5%

At the end of the test period all bulls are classified into one of the following grades: Breeder, Commercial or plain. Although there is very little correlation between type and performance the bulls in the top grade had a much better performance than those in the second grade, as shown in the next table.

	<i>Breeder</i>	<i>Commercial</i>
<i>No. Bulls</i> .....	154	336
Av. starting weight .....	606 lbs.	584 lbs.
Av. finishing " .....	1,042 "	987 "
Av. total gain .....	436 "	403 "
Av. daily gain .....	2.58 "	2.40 "
Av. lifetime gain .....	968 "	914 "
Av. daily gain lifetime .....	2.35 "	2.22 "

Earlier in this report reference was made to the fact that a higher premium is paid on bulls with satisfactory performance records than on bulls approved from the standpoint of appearance only. In order to qualify for that higher premium a bull must make at least 2.30 pounds per day on test, 2.15 pounds per day during his lifetime and be graded breeder or commercial.

### Regional Shows

Although more and more emphasis is being placed on performance, due consideration is still being given to shows. Accordingly every breeder's club which



sponsors a special or regional show may qualify for a grant of 20 per cent of the prize money paid out, but not more than \$100.

A summary of grants paid in 1958 is shown in the following table:

<i>Breed</i>	<i>No. Shows</i>	<i>No. entries</i>	<i>No. animals shown</i>	<i>Total grants</i>
Holstein .....	44	6,122	5,003	\$4,026.25
Ayrshire .....	18	1,675	1,226	1,420.00
Jersey .....	17	1,882	1,405	1,279.99
Guernsey .....	13	1,223	914	1,103.50
Shorthorn .....	8	913	702	785.20
Hereford .....	7	727	483	641.20
Angus .....	5	535	424	482.20
D.P. Shorthorn .....	1	59	54	78.00

### Consignment Sales

Breeders' clubs that undertake to sponsor consignment sales may qualify for grants, the basis being \$5.00 for every animal sold but not more than \$200 per sale. All animals included for such sales must be approved from the standpoint of type and conformation and be free from Tuberculosis and Brucellosis.

Payments made under this policy are summarized in the following table:

<i>Breed</i>	<i>No. sales</i>	<i>No. animals sold</i>	<i>Total grants paid</i>
Holstein .....	8	287	\$ 1,240.00
Ayrshire .....	3	126	590.00
Guernsey .....	5	192	895.00
Jersey .....	1	25	125.00
Shorthorn .....	14	338	1,740.00
Hereford .....	12	308	1,540.00
Angus .....	5	170	840.00
Combined breed sales .....	2	47	260.00
Total .....	50	1,493	\$7,230.00

### The Ontario Bull Sale

This sale is held annually under the auspices of the Ontario Beef Cattle Improvement Association. Each beef breed association and the Beef Producers Association is represented on the Board of Directors by three directors. In addition there are three directors from the Ontario Department of Agriculture and one from the Canada Department of Agriculture. The Live Stock Commissioner serves as secretary-treasurer.

All bulls consigned to these sales are screened by a panel of three judges. If all judges consider that a bull is unsuitable for use as a sire he must be sold for slaughter. If a bull is rejected by two judges he is not eligible for the sale, but he still remains the property of the consignor. Entries at the 1959 sale, held on March 4th and 5th, were dealt with as follows:

Total number bulls entered .....	296
No. withdrawn previous to the sale .....	37
No. rejected, improperly tattooed .....	3
No. rejected by 3 judges .....	12
No. rejected by 2 judges .....	13
No. unsold — no buyers .....	12
No. sold .....	219

*AV. PRICES 1959 vs. 1958*

	<i>No. sold</i>	<i>Av. price</i>	<i>No. sold</i>	<i>Av. price</i>
<i>Breed</i>	<i>1959</i>	<i>1959</i>	<i>1958</i>	<i>1958</i>
Angus .....	22	\$ 756.81	17	\$ 645.59
Hereford .....	108	675.00	81	572.28
Shorthorn .....	89	517.35	92	482.07
	219	\$ 619.15	190	\$ 535.15

*AV. PRICES, PERFORMANCE TESTED vs. NON-TESTED BULLS*

<i>Breed</i>	<i>No. tested bulls</i>	<i>Av. price</i>	<i>No. non-tested bulls</i>	<i>Av. price</i>
Angus .....	4	\$1,486.25	18	\$ 594.72
Hereford .....	52	780.48	56	577.05
Shorthorns .....	40	562.87	49	480.20

## DEMONSTRATION PASTURE FARMS

In 1950, the Minister of Agriculture named a committee, under the chairmanship of the Live Stock Commissioner, and charged the members with the responsibility of promoting pasture improvement, particularly in areas where beef cattle predominate. In the years following this committee leased five farms, one in each of the main grazing areas of Old Ontario. In each case the farm was divided in three plots; two plots being used to demonstrate methods of pasture improvement, the other being left to serve as a check.

Two methods have been used, namely, breaking up old soil followed by reseeding, and rejuvenating by means of spraying to control weeds and applying fertilizer to stimulate grass growth. Of course, the areas selected for reseeding were fertilized at the time of seeding and at regular intervals thereafter.

Generally speaking these farms carried about 20 cattle, that is, one animal for every 5 acres, before steps were taken to improve the pasture. During recent years the range has been between one steer per acre and one steer for every two acres. The volume of beef produced per 100 acres has increased from about 5,000 pounds to an average of over 13,000 pounds in 1958.

On the basis of results obtained to date it is quite apparent that, despite the relatively high cost of pasture improvement, the increased returns are more than sufficient to compensate for the expenditures. Of the two methods employed, rejuvenation of old sod by weed control and fertilizer applications will prove the most economical in fields where there is a fairly good stand of grass, but if the stand is thin and the field is weedy the breaking up and reseeding method will prove to be the better investment.

## BRUCELLOSIS CONTROL

In Ontario, all female calves must be vaccinated after reaching the age of four months but before becoming 11 months old. Every cattle owner may have his calves vaccinated by the veterinarian of his choice. These men in turn are reimbursed by the Live Stock Branch at rates established by negotiations. In 1958, 368,024 calves were vaccinated in Ontario, the total cost being \$528,495.15, of which \$507,179.00 was paid to veterinarians for services rendered.

In cases where calves die of shock following vaccination, owners are compensated in amounts ranging up to \$100 on pure breds and up to \$50 on grades. In 1958, \$2,775.00 was paid to the owners of 44 calves.

In 1957, the Health of Animals Branch, Canada Department of Agriculture, initiated a programme designed to eradicate Brucellosis. This programme, known as the test and slaughter plan, does not become applicable to any area until the cattle owners residing therein petition in favor of its adoption. When an area has been accepted, all cattle except those in age groups that are specifically exempted, must be tested and the reactors are sold for slaughter, with the owners receiving the market value from the slaughterer and compensation in accordance with a prescribed schedule from the federal government.

Throughout 1958, members of the Ontario Live Stock Branch staff attended county meetings for the purpose of explaining the programme and of assisting with the organization of canvasses. By the end of the year canvasses had been completed in the majority of counties in Old Ontario. In practically every case over 85 per cent of the cattle owners signed the petitions.

Testing commenced in Oxford and Prince Edward in March and was extended to a great many other counties before the end of the year. By March 31st, 6 counties, namely, Oxford, Prince Edward, Halton, Grenville, Stormont and Dundas, had been declared certified Brucellosis free areas, while the status of other counties under test was as follows:

*REPORT OF TESTS CONDUCTED UNDER THE BRUCELLOSIS  
CONTROL AREA PLAN, UP TO MARCH 31st, 1959*

<i>County</i>	<i>No. Cattle</i>	<i>No. Reactors</i>	<i>% Reactors</i>	<i>No. Herds</i>	<i>No. Infected Herds</i>	<i>% Infected Herds</i>
Brant .....	15,003	100	0.67	554	54	9.75
Carleton .....	38,951	426	1.09	1,086	176	16.21
Elgin .....	37,441	414	1.11	1,649	192	11.64
Frontenac .....	9,612	49	0.51	309	20	6.47
Glengarry .....	38,186	284	0.74	1,422	152	10.69
Hastings .....	10,798	66	0.61	531	42	7.91
Leeds .....	35,793	142	0.40	1,302	76	5.84
Lennox & Addington .....	5,367	16	0.30	209	7	3.35
Peel .....	23,238	225	0.97	672	95	14.14
Waterloo .....	1,966	15	0.76	55	8	14.55
York .....	35,124	490	1.40	1,354	226	16.69
	<u>251,479</u>	<u>2,227</u>	<u>.89</u>	<u>9,143</u>	<u>1,048</u>	<u>11.46</u>

A perusal of these results reveals that Ontario acted wisely in pursuing a policy of calfhood vaccination for several years prior to the adoption of the test and slaughter plan. Undoubtedly the percentage of reactors is much lower than would have been the case if no preventative measures had been taken.

#### Warble Fly Control Act

Warble fly control programmes were conducted in 263 townships in 1958; including most of the townships in which beef cattle predominate. In these townships, owners were required to treat all cattle with warble grubs at least once, and to apply a second treatment in cases where living grubs were discovered after an interval of 2 - 3 weeks.



According to reports submitted by township inspectors 1,121,883 cattle were treated between April 10th and 18th, the period prescribed for the first treatment, while 1,044,401 cattle were treated during the early part of May.

Townships in which the Act is in force are eligible for grants as follows:

- (a) 50 per cent of the salary and expenses of inspectors, and
- (b) 50 per cent of the cost of warble fly powder.

The total amount paid to municipalities in 1958 was \$73,275.54.

### Health of Live Stock Act

This Act provides for the licencing of community sale operators. The conditions with which the operator must comply are set forth in the regulations. Briefly, they are designed to prevent the sale of live stock infected with disease. Operators are required to employ veterinarians to inspect all deliveries and they, in turn, are empowered to reject any animal that shows evidence of being infected. Members of the Live Stock Branch staff make inspections of sale premises periodically.

In 1958, licences were granted to the operators of 69 sales, each of whom held regularly scheduled weekly sales.

### HORSES

#### The Stallions Act

Following an amendment to the Stallions Act in 1958, regulations were adopted under which all breeds except those used in farming operations were exempted. As a result the only breeds subject to the provisions of the Act are Clydesdale, Percheron, Belgian, Canadian, Suffolk and German Coach. This accounts for the sharp reduction in the number of stallions enrolled.

Stallions are classified into three grades, namely, A, B and C. The owners of those in the two top grades are eligible for premiums on the basis of \$3.00 and \$2.00, respectively, for each mare left with foal. The total amount paid in premiums in 1958 was \$13,085.00.

#### Federal-Provincial Foal Premium Policy

Under this policy owners of pure bred mares which have been inspected and approved may qualify for premiums when such mares produce living foals sired by grade A stallions of the same breed. The premium amounts to \$25.00, one-half of which is paid by each of the Departments concerned. In 1958, the total amount paid to owners of approved mares was \$1,337.50.

In view of the fact that the policy did not fulfill its purpose of stimulating interest in the breeding of heavy draught horses it was discontinued at the end of the year.

#### Horse Shows

Horse breeders' clubs may qualify for grants to assist in financing horse shows held under their sponsorship. At most shows the grant is paid on the basis of 50 per cent of the prize money, but not more than \$300. At larger shows the grant may be increased to \$500 provided that a grant of equal proportions is obtained from the county council.

Grants paid in 1958 were as follows:

Brooklin Spring Horse Show .....	\$ 300.
Toronto Horse Show .....	300.
Kinsman Club of Uxbridge .....	300.
Elgin Horse Breeders Association .....	148.
Middlesex Heavy Horse Show .....	100.
Galt Horse Show Association .....	300.
St. Catharines Riding & Driving Club .....	500.
North Blenheim Horse Breeders Association .....	300.
Lynden Horse Breeders Association .....	300.
	<hr/>
	\$2,548.

## SWINE

### Boar Premium Policy

This policy was designed to encourage farmers to use boars that combine type and performance. Only boars out of sows that have qualified under the Advanced Registry policy are eligible for approval and such boars must be approved from the standpoint of type and conformation before acquiring an approved status.

Farmers who buy approved boars are eligible for premiums in accordance with a graduated schedule which provides for the highest premiums to be paid on boars out of dams with the best performance records.

Premiums amounting to \$16,395 were paid to the purchasers of 526 boars.

### Bacon Hog Club Policy

This policy is applicable to areas in which approved boars are not readily available. Whenever the farmers in such an area organize themselves into a club a boar is supplied on a rental basis. The rental fee is \$15.00 and covers the period that the boar is retained by the club. At the end of the year there were 63 clubs in the province, of which 11 were organized in 1958.

### Swine Sales

County or district swine breeders' clubs may qualify for grants to assist in defraying the cost of sales held under their sponsorship. These grants are on the basis of \$2.00 per animal sold.

A report of sales held in 1958 is contained in the following table:

<i>Sponsoring organization</i>	<i>No. Head sold</i>	<i>Av. price</i>	<i>Grant</i>
Zone 2 Yorkshire Club .....	46	\$192.17	\$ 92.00
Grey County A.R. Club .....	26	161.05	52.00
Stratford District Yorkshire Club .....	32	195.15	64.00
Simcoe County Yorkshire Club .....	26	136.35	52.00
Waterloo A.R. Yorkshire Club .....	46	187.71	92.00
Wellington A.R. Yorkshire Club .....	23	145.43	46.00
Ontario Swine Breeders Ass'n .....	56	155.89	112.00
Middlesex Yorkshire Breeders Ass'n .....	31	88.14	62.00
Ontario Landrace Swine Ass'n .....	45	107.61	90.00

Haldimand District Pure Bred Beef Cattle and Swine Breeders Ass'n	7	126.43	14.00
Dufferin Pure Bred Beef and Swine Breeders Ass'n .....	14	153.92	28.00
Western Ontario Landrace Ass'n .....	36	107.91	72.00
South Western Ontario Yorkshire Club	28	145.45	56.00
			<hr/> \$ 832.00

### Regional Shows

Grants are available to Breeders' Clubs that sponsor regional shows, the basis being 25 per cent of the prize money paid out but not exceeding \$100 per show.

A summary of shows held in 1958 follows:

<i>Breed</i>	<i>No. Shown</i>	<i>No. Entries</i>	<i>No. Head shown</i>	<i>Total Grants</i>
Yorkshire	7	692	546	\$693.75
Berkshire	1	59	43	52.00
Tamworth	1	111	88	100.00

### SHEEP

#### Ram Premium Policy

Under this policy every farmer who purchases an approved ram at a consignment sale held under the auspices of a Sheep Breeders' Club is eligible for a premium equal to 20 per cent of the purchase price but not exceeding \$25.00. In 1958-59, premiums totalling \$669.80 were paid to the purchasers of 64 approved rams.

The clubs sponsoring the sales at which these rams were sold qualified for grants of \$188.00 to assist in defraying the expenses of same.

#### Special Sheep Shows

Five regional sheep shows were held during 1958. In each case the sponsoring group received a grant of \$100 to help finance the prize offering. In all, 1,039 sheep were exhibited at these shows.

#### Live Stock Assistance in Northern Ontario

In order to encourage farmers in Northern Ontario to improve their herds and flocks grants in aid of transportation are available. The number of head of cattle moved under this policy is shown in the next table.

<i>Destination</i>	<i>No. Head</i>
Algoma .....	193
Cochrane .....	85
Manitoulin .....	329
Muskoka .....	20
Nipissing .....	51
Parry Sound .....	36
Rainy River .....	3
Sudbury .....	75
Temiskaming .....	40
Thunder Bay .....	65
Total .....	<hr/> 897



The majority of these cattle were milk cows, presumably purchased by farmers with whole milk contracts. The total freight assistance payments were \$11,368.58.

### **Subsidized Veterinary Service**

In an attempt to induce veterinarians to establish practices in the territorial districts, the Ontario Live Stock Branch offers to match contributions made by local organizations up to a maximum of \$1,600. The fund so created is paid to the veterinarian in quarterly instalments on the understanding that he will serve farmers in the district, regardless of where they live, at a standard schedule of fees, agreed upon by himself and the committee in charge. In 1958 grants totalling \$21,600 were made to local committees in the 13 districts in which veterinarians are located.

### **General**

In addition to performing the duties associated with administering Acts of a live stock nature and attending to details connected with the various live stock policies, members of the Branch staff were called upon to address a great many agricultural meetings and to serve as executive officers of a number of live stock associations, notably the Ontario Horse Breeders' Ass'n, the Ontario Cattle Breeders' Ass'n, the Ontario Sheep Breeders' Ass'n, and the Ontario Swine Breeders' Ass'n.

## *Ontario Telephone Authority*

The Ontario Telephone Authority was organized under the provisions of The Telephone Act, 1954, and is charged with two main duties.

- (1) To administer the Act as it relates to the operation of Telephone Systems which come under the jurisdiction of the Province of Ontario.
- (2) To provide staff for the purpose of supplying these systems with engineering, accounting and other technical assistance pertaining to telephone problems with the end in view of improving telephone service in the Province, particularly in the rural areas.

### ORGANIZATION

The overall organization may be divided in accordance with the above functions into —

- (a) The Ontario Telephone Authority
- (b) The Telephone Technical and Commercial Branch.

### The Ontario Telephone Authority

The Ontario Telephone Authority is composed of four members appointed by the Lieutenant-Governor in Council and a permanent Secretary. Two of the members are actively engaged in the telephone industry and serve on a per diem basis. The third member and Vice-Chairman is the Chief Agricultural Officer of the Department of Agriculture and serves as required. The fourth member and Chairman serves on a full-time basis and is also Director of the Branch.

The Authority meets once per month, or oftener if necessary, at the call of the Chairman, to consider all matters, submitted by telephone systems, which require approval under the provisions of The Telephone Act, 1954. These include applications for approval of revised rate schedules, borrowing and other by-laws, special resolutions, capital expenditures, sales and mergers, franchise by-laws, long distance traffic agreements etc.

Members of the Authority also hold meetings with telephone system officials both in the office and in the field in order to assist them in reaching decisions on major problems affecting the operation of their systems. The members also accept as many invitations as it is possible for them to handle, to attend subscribers' and shareholders' annual meetings and their experienced advice is always appreciated.

Regular meetings are held with officials of the Bell Telephone Company in order to discuss problems that affect both this Company and the Independent Systems and meetings are also held with officials of the Hydro Electric Power Commission and other government departments in order to work out agreements affecting the telephone systems.

The Ontario Telephone Authority also holds hearings in cases where there is public opposition to a rate increase or other action proposed.

During the past year (April 1, 1958 to March 31, 1959) a total of 152 Orders were issued by the Authority as follows:

# Summary of Orders

For approval of sale of municipal systems and distribution of assets .....	9
For approval of by-laws of municipal systems .....	2
For an Order prescribing date for holding annual meeting of subscribers .....	7
For approval of a municipal by-law granting right-of-way .....	4
For approval of by-laws of telephone companies .....	26
For an Order prescribing type of service .....	1
For approval of agreements for interchange of service .....	6
For approval of sale of telephone companies .....	38
For approval of telephone charges .....	49
For authority to issue stocks, bonds, or other evidence of indebtedness .....	7
For approval of cancellation of a previous Order .....	3
	152

## The Telephone Technical and Commercial Branch

The Chairman of the Ontario Telephone Authority is also the Director of the Telephone Branch. The work of the Branch is divided between the Engineering Department which consists of an Engineering Director, Assistant, five field representatives and a Clerk-Stenographer and the Commercial Department which consists of a Commercial Director, Assistant and Clerk-Stenographer.

Technical and Commercial assistance provided by the Branch has been responsible for a marked improvement in the service being provided by many local telephone systems and, in a number of cases, complete systems have been rebuilt in accordance with plans designed by the Branch. These systems are now providing modern common battery or dial service and several others are in the process of converting to an improved type of service.

When a telephone system requests assistance in planning a rebuilding programme with a view to converting to dial service, the engineering and commercial directors co-operate on a preliminary study to determine the approximate cost of the project and whether or not the expenditure would be warranted by savings in operator expense and increased revenue. If the system then decides to proceed, a detailed field study is made and, based on the information obtained, complete engineering plans are prepared covering the pole and wire plant and specifications for central office equipment. Assistance and advice is continued until the work is complete and the new system is working satisfactorily. Other systems have been given assistance in moving telephone lines for highway widening, procuring joint-use agreements with the Hydro Electric Power Commission, making additions and changes in cable, wire plant and central office equipment. The field men give "on the job" instruction on all phases of the work especially to smaller systems which are unable to maintain a staff of fully trained personnel.

The following is a summary of some of the activities of the engineering staff during the past fiscal year:

<i>Item</i>	<i>Number</i>
New central offices engineered and cut into service: Dial .....	3
Manual .....	2
Dial private branch exchange for which specifications were prepared and equipment installed .....	1
Specification completed for central offices moved to new locations .....	3
Systems for which field surveys were made and complete plant engineering plans issued .....	7
Systems for which technical surveys or plant evaluations were made .....	13
Systems which received assistance in re-locating telephone plant required due to highway construction .....	9



The commercial department is prepared to assist telephone systems with general business and accounting advice. The staff is qualified to instruct the Secretaries of systems in improved bookkeeping methods and assist them to establish new systems of records. The time of one man is devoted almost exclusively to this phase of the work and excellent results have been achieved.

A large portion of the work of the commercial department consists of answering queries received both by mail and in person from the various systems, concerning proper procedures to follow when they wish to take action under the provisions of The Telephone Act, 1954, The Corporations Act, 1953, and The Municipal Act.

Under The Telephone Act, 1954, a telephone system must apply to the Authority for an Order of approval before a by-law, schedule of rates, or certain aspects of the physical or financial set-up of the system can legally be changed. The commercial department prepares the information on which the Authority bases its decision as to whether or not the action should be approved.

In the case of an application for an Order approving the sale of a system, or a part thereof, an investigation must be made to determine that a future merger or other desirable development will not be prejudiced. The studies of various merger possibilities require cost figures and revenue forecasts and the commercial and engineering departments combine in providing this information.

In the case of an application for an increase in rates, a study must be made both to determine that the rates are reasonable from the standpoint of the telephone users, and that they are adequate for the needs of the system concerned. In some cases, proposed rates have not been approved in the first instance because they were too low, and the system has been shown that it must have a certain revenue in order to provide proper service and that a more realistic rate schedule should be established.

The Commercial Department also collects and checks the "Telephone Statistics" reporting from on which all systems make an annual return to the Dominion Bureau of Statistics and to this Authority. These returns are used extensively in analysing the problems of individual systems as well as in preparation of the annual publication "Summary of Statistical Returns from Telephone Systems" which is widely used by the telephone systems themselves, equipment suppliers and others interested in the telephone industry.

## SUMMARY OF STATISTICS

Complete returns for the calendar year 1958 are not available at the date of publication of this Report but detailed statistics on individual systems will be contained in the "Summary of Statistical Returns from Telephone Systems" which is mentioned above and which will be published later in the year.

As at January 1, 1958, there were 346 independent telephone systems within the jurisdiction of Ontario operating approximately 173,500 telephones. During 1958, 13 independent systems, operating 4,600 telephones ceased to operate or were sold to other telephone systems. At January 1, 1959, therefore, there were 333 remaining independent systems reporting to this Authority. It is assumed that natural growth of the remaining systems will result in the total number of operated telephones remaining approximately the same despite the fact that most of these sales were made outside the independent field.

### Sales

The following six systems gave up business during 1958 and their areas will now be served by the Bell Telephone Company of Canada. Usable plant has been

retained and the remainder of their lines has been reconstructed to modern standards.

<i>Name</i>	<i>Address</i>	<i>No. of Phones</i>
Desboro Telephone Co. Ltd. _____	Desboro _____	175
Desboro Mooresburg Telephone Co. Ltd. _____	Desboro _____	15
Glenview Rural Telephone Co. Ltd. _____	Smiths Falls _____	55
Gore "G" Telephone Co. Ltd. _____	Picton _____	33
Sparta Rural Telephone Co. Ltd. _____	Sparta _____	186
Swale (Cecil) Telephone System _____	Wiarton _____	36

Seven additional systems were sold to larger telephone companies and their operation will be integrated with that of the new owners.

<i>Name</i>	<i>Address</i>	<i>No. of Phones</i>	<i>Sold to</i>
Chapple Municipal Telephone System _____	Barwick _____	180	Bell Telephone Company
Chinguacousy Municipal Telephone System _____	Snelgrove _____	1,191	Bell Telephone Company
Hazeldean Municipal Telephone System _____	Hazeldean _____	863	Bell Telephone Company
Mersea Municipal Telephone System _____	Leamington _____	1,112	Bell Telephone Company
Palace Road Telephone Co. Ltd. _____	Napanee _____	55	Napanee & Deseronto Rural Telephone System
Plum Hollow and Eloida Independent Telephone Co. Ltd. _____	Athens _____	466	Bell Telephone Company
Rainy River Municipal Telephone System _____	Rainy River _____	241	Bell Telephone Company

Two Orders were issued during the year to approve change of ownership. The systems concerned will, however, continue to operate as separate entities. The Erin Municipal Telephone System, operating 750 telephones in and around the Village of Erin, was purchased by a new limited company organized for the purpose and plans are underway for the rehabilitation of the telephone plant.

The Gore Bay Municipal Telephone System, which operates 340 telephones in the vicinity of Gore Bay on Manitoulin Island, was sold to the Municipality of Gore Bay to be operated as a Public Utility under Part I of The Telephone Act, 1954.

Two sales of a portion of a telephone system were made during the year. The London Township Municipal Telephone System sold that portion of its plant located near Hyde Park Corners to the Bell Telephone Company of Canada. Direct service from the latter company's London Exchange will now be supplied to approximately 100 former customers of the Municipal System. A portion of the Desboro-Mooresburg Telephone Co. Ltd. was taken over by the neighbouring Victory Telephone Company Limited early in the year and the balance of the system was subsequently supplied with service from the Bell Exchange at Chatsworth.

In addition to the above completed transactions, arrangements have been made for the sale or overbuild during 1959-1960 of an additional 28 systems operating approximately 3,750 telephones. Each case has been studied individually by the Authority and an Order has been issued approving the action.

Preliminary negotiations are underway for the sale or overbuild of 41 further systems although final Order of approval has not yet been issued by the Authority. In many cases, however, the Authority has been called upon to make a study of the

situation and assist the system concerned to determine the best course of action. These 41 systems operate approximately 4,700 telephones and it is anticipated that the sale or overbuild of most of them will be completed within the next five years.

### Organization of Systems

The independent telephone systems in Ontario may be divided into four classes according to type of ownership. The 333 systems operating at the beginning of 1959 are organized as shown in the following table which also shows the number of telephones in each of the groups as of January 1, 1958.

#### Type of Ownership

	<i>Systems</i>		<i>Systems</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Systems operated as Public Utilities by Municipal Corporations .....	8	2.4	39,863	23.5
Municipal Systems .....	76	22.8	37,727	22.5
Systems owned by Incorporated Telephone Companies ....	217	65.0	85,949	50.8
Systems owned by Individuals or Partnerships .....	32	9.8	5,363	3.2
	<hr/> 333	<hr/> 100.0	<hr/> 168,902	<hr/> 100.0

#### Size of Systems

The relative size of the independent systems is also of interest. Due to a trend of the times, many small systems are finding it economically impossible to continue to operate and are either selling out or vacating the area and making arrangements for another system to provide service. In the early days of the telephone industry, many groups of farmers, realizing the value of the telephone to them in conducting their business, organized telephone systems in their own communities, rather than wait until one of the larger companies could serve them. Good telephone service is to-day of even greater value and may be considered almost essential in the marketing of farm produce, yet it is from the rural areas that most complaints are received. Telephone service throughout rural Ontario is, however, continually improving. The sale of smaller systems to their larger neighbours generally results in more efficient operation and there is no doubt that most of the remaining independents, with the encouragement and assistance of the Ontario Telephone Authority, are making considerable progress in the modernization of their equipment and methods.

The following table indicates the size of systems operating in Ontario as at January 1st, 1959, and also shows the split between Connecting Companies and Service Station Systems. "Connecting Companies" are those which operate a complete telephone plant including switchboards, while "Service Station Systems" provide only the telephone and line facilities which connect their subscribers with another company's switchboard and they must pay a switching charge for such connection.

<i>No. of Telephones Operated</i>	<i>Connecting Companies</i>		<i>Service Station Systems</i>		<i>Total</i>	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
1 - 10 .....	1	.6	17	11.0	18	5.4
11 - 25 .....	1	.6	57	36.7	58	17.4
26 - 50 .....	7	4.0	37	23.9	44	13.2
51 - 100 .....	14	7.9	21	13.5	35	10.5
101 - 300 .....	56	31.4	15	9.7	71	21.3



301 - 600 .....	41	23.0	8	5.2	49	14.8
601 - 1,000 .....	29	16.3	—	—	29	8.7
1,001 - 2,000 .....	20	11.0	—	—	20	6.0
2,001 - 5,000 .....	6	3.4	—	—	6	1.8
5,001 - and over .....	3	1.8	—	—	3	.9
	<u>178</u>	<u>100.0</u>	<u>155</u>	<u>100.0</u>	<u>333</u>	<u>100.0</u>

It will be noted from the above table that over 45 per cent of the systems operate less than 100 stations each and more than 65 per cent have less than 300. Since the average system of less than 300 telephones cannot justify or afford a full-time employee to construct and maintain the plant, and still less, pay for management which is experienced in the telephone business, it is obvious that at least this 65 per cent of the total systems are operated not as a business but as something secondary to the principal occupations of the people concerned. Only 30 systems own more than 1,000 telephones which number might be considered the minimum for efficient operation.

## *Provincial Apiarist*

Some 57,709 colonies of bees were inspected by Ontario Apiary Inspectors during 1958, in 3,655 apiaries. American Foulbrood was found in 270 apiaries, or 7.3 per cent of those inspected. These diseased apiaries contained 973, or 1.6 per cent, infected colonies.

In 1958, 3,126 beekeepers registered 5,610 apiaries and 135,418 colonies.

During the year 84 disease samples were diagnosed. Approximately 197 permits were issued for selling and moving colonies and equipment. Twenty-seven (27) permits were issued for moving 3,046 colonies for pollination of fruit, greenhouse and legume crops.

The 1958 Ontario honey crop was down almost 50 per cent — to 5,678,000 pounds. This was due to the severe drought suffered in most of the Province during the spring and summer.

The 1958 detailed crop report was prepared by the Dominion Bureau of Statistics, Ottawa. The Provincial Apiarist supplied county lists of beekeepers for this work. It is planned to continue this survey system with the Dominion Bureau of Statistics in order to have a uniform system of obtaining crop production throughout Canada.

### INSPECTION AND REGISTRATION OF COLONIES OF BEES

<i>County</i>	<i>INSPECTION</i>				<i>REGISTRATION</i>	
	<i>Apiaries</i>		<i>Colonies</i>		<i>Apiaries</i>	<i>Colonies</i>
	<i>Inspected</i>	<i>Diseased</i>	<i>Inspected</i>	<i>Diseased</i>		
Algoma .....	13	0	145	0	9	120
Brant .....	64	6	930	10	90	1,330
Bruce .....	55	1	1,500	1	195	6,442
Carleton .....	107	12	4,241	46	154	4,772
Cochrane .....	27	0	385	0	23	337
Dufferin .....	56	0	720	0	62	1,991
Dundas .....	27	2	437	16	68	1,666
Durham .....	98	7	956	31	111	2,348
Elgin .....	93	7	1,104	19	134	2,691
Essex .....	123	12	1,224	37	218	3,044
Frontenac .....	22	0	400	0	61	1,412
Glengarry .....	97	32	2,999	168	68	2,891
Grenville .....	17	0	276	0	41	911
Grey .....	55	7	1,343	22	248	9,046
Haldimand .....	37	3	582	8	136	3,486
Haliburton .....	9	1	53	6	7	42
Halton .....	1	0	30	0	109	3,116
Hastings .....	108	7	1,566	36	197	6,535
Huron .....	83	1	1,182	1	199	5,873
Kenora .....	No Inspection				3	11
Kent .....	130	6	1,156	13	124	1,587
Lambton .....	125	6	1,714	24	236	5,302

## INSPECTION

## REGISTRATION

County	Apiaries		Colonies		Apiaries	Colonies
	Inspected	Diseased	Inspected	Diseased		
Lanark .....	91	2	1,619	5	98	3,466
Leeds .....	32	0	573	0	92	2,402
Lennox & Addington ..	1	0	20	0	84	2,948
Lincoln .....	165	14	1,296	41	185	2,429
Manitoulin .....	No Inspection				16	196
Middlesex .....	168	7	2,227	33	189	5,180
Muskoka .....	20	0	126	0	13	120
Nipissing .....	No Inspection				13	71
Norfolk .....	107	0	979	2	97	916
Northumberland .....	121	6	1,432	16	151	3,169
Ontario .....	147	8	2,666	21	137	2,597
Oxford .....	94	7	1,138	18	99	2,067
Parry Sound .....	No Inspection				23	297
Peel .....	47	5	656	15	126	2,974
Perth .....	52	1	1,168	2	94	2,758
Peterboro .....	54	0	738	0	94	1,898
Prescott .....	80	20	3,706	47	51	2,547
Prince Edward .....	67	10	1,503	24	68	1,550
Rainy River .....	33	2	518	0	34	800
Renfrew .....	60	6	1,156	79	118	3,603
Russell .....	40	0	676	0	44	899
Simcoe .....	171	13	3,145	64	287	7,534
Stormont .....	20	4	754	6	72	2,152
Sudbury .....	No Inspection				2	10
Thunder Bay .....	No Inspection				10	38
Timiskaming .....	12	0	370	0	46	1,800
Victoria .....	70	2	714	6	92	2,176
Waterloo .....	96	9	1,152	34	112	2,241
Welland .....	150	17	1,359	57	149	1,540
Wellington .....	117	5	1,658	10	149	3,739
Wentworth .....	138	7	1,262	8	141	2,188
York .....	145	15	2,155	47	231	4,160
TOTAL .....	3,655	270	57,709	973	5,610	135,418



## *Provincial Entomologist*

The duties of the Provincial Entomologist in relation to the Plant Diseases Act were carried out in co-operation with the Farm Products Inspection Service of the Ontario Markets Branch and the Plant Protection Division of the Canada Department of Agriculture. All other work was conducted at the Department of Entomology and Zoology, Ontario Agricultural College, Guelph.

Extension work in relation to the control of injurious pests was carried out as need and time permitted. In general the control of injurious pests was excellent but with some exceptions. The apple crop was particularly free from insect damage. A strain of the onion maggot that was not controlled by the recommended chlorinated hydrocarbon insecticides caused considerable injury to onions and the six-spotted leafhopper, while not as destructive as in 1957, continued to be very important.

Although more Japanese beetles were collected in traps in 1958 compared to the previous year, at no time have numbers been large enough to cause crop damage. It is hoped that these beetles will not reach injurious numbers here. Since there was a slight increase and in order to comply with more rigid enforcement of Japanese-beetle quarantine regulations of the United States concerning nursery stock, a greater area of soil was treated. In co-operation with the Canada Department of Agriculture the following were treated with ten per cent dieldrin granular at 30 pounds per acre: St. Catharines 13 acres, Fort Erie 30 acres, and Hamilton 21.5 acres. This pest has not been included in the Plant Diseases Act of this Province.

### REGULATORY DUTIES

The Provincial Entomologist was in charge of certain "Plant Diseases" under the Plant Diseases Act.

#### *Nursery Inspection*

Licences were issued by the Farm Products Inspection Service for the operation of 273 nurseries and 59 dealers in nursery stock. The total of fruit and ornamental nursery stock inspected under the Plant Diseases Act was 5,212,826 of which 163 were infested with San Jose scale, one with fire blight, and two with black knot. The infested plants were destroyed.

Although definite numbers were not obtained, Lecanium scale appeared to have increased in importance, the same as has occurred in commercial fruit orchards.

**Bulb and Stem Nematode, *Ditylenchus dipsaci*.**  
(Kuhn 1857) Filipjev, 1936.

The principle onion-growing areas of Ontario were examined for the presence of the bulb and stem nematode in 1958. Samples were collected from 78 farms in 11 onion-growing areas. Nematode was found in two samples only in the Leamington Marsh. Both of these came from farms where onions were grown in 1958 on land known to be infested in 1957. It would appear that the destruction of the nematode-infested sets in 1957 and the rotation that the growers used in 1958 reduced its numbers and confined this nematode to the original area.

**Apple Maggot**

Apple orchard certification to qualify growers to ship apples to countries requiring a certificate concerning the apple maggot was provided by the Ontario Markets Branch (Farm Products Inspection Service) and the Canada Department of Agriculture. Of those applying for certification, a high percentage qualified because of a general light infestation of this pest.





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## NOTES

## NOTES



























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